

# List of All Chemicals

## **P** Thuja occidentalis (Cupressaceae)

### Common name(s)

Arbor-Vitae; Northern White-Cedar

### How used

Medicinal

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

| Chemical  | Part     | Low PPM | High PPM | StdDev | *Reference  |
|---|----------|---------|----------|--------|---|
| (+)-CATECHIN  | Branches | --      | --       |        | *   |
| <b>Activities (30)</b>  |          |         |          |        |   |
| ACE-Inhibitor IC50=0.155 mM/l                                 |          |         |          |        |   |
| ACE-Inhibitor 0.24 mg/ml rbt (weak activity)                  |          |         |          |        |   |
| AntiHIV EC50=4 ug/ml  |          |         |          |        |   |
| Antiaggregant IC68=200 ug/ml                                  |          |         |          |        |   |
| Anticoagulant   |          |         |          |        |   |
| Anticomplementary 1/2 aspirin                                 |          |         |          |        |   |
| Antiinflammatory IC50=40-943 uM (cf indomethacin IC50=1 uM)   |          |         |          |        |   |
| Antimutagenic ID50=50-100 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   |          |         |          |        |   |
| Antiperoxidant  |          |         |          |        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Antiprostaglandin IC50=40-943 uM (cf indomethacin IC50=1 uM)  |          |         |          |        |   |
| Antiradicular   |          |         |          |        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Antiulcer   |          |         |          |        |   |
| Beta-Adrenergic Receptor Blocker 10 uM (weak activity)        |          |         |          |        | Zhu, M., Phillipson, J. D., Greengrass, P. M., Bowery, N. E., Cai, Y. 1997. Plant Polyphenols: Biologically Active Compounds or Non-Selective Binders to Protein? Phytochemistry, 44(3): 441-447. |
| COX-1-Inhibitor IC50=183-279 uM (cf indomethacin IC50=1 uM)   |          |         |          |        |   |
| COX-2-Inhibitor IC50=546-5,910 uM (cf indomethacin IC50=1 uM) |          |         |          |        |   |
| Cancer-Preventive   |          |         |          |        | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990. 399 pp.   |
| Cardiotonic   |          |         |          |        |   |
| Cyclooxygenase-Inhibitor                                      |          |         |          |        |   |
| Cytotoxic TC50=>100 ug/ml                                     |          |         |          |        |   |
| Dermatitigenic  |          |         |          |        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Hemostat  |          |         |          |        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Hepatoprotective  |          |         |          |        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.  |
| Immunostimulant   |          |         |          |        | Economic & Medicinal Plant Research, 1: 124.  |
| NO-Inhibitor IC11=250 uM                                      |          |         |          |        |   |
| Neuroprotective 1-10 uM                                       |          |         |          |        |   |
| Phagocytotic  |          |         |          |        | Economic & Medicinal Plant Research, 1: 124.  |
| Vasoconstrictor   |          |         |          |        | Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.  |
| Xanthine-Oxidase-Inhibitor                                    |          |         |          |        | Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.   |
| cAMP-Phosphodiesterase-Inhibitor                              |          |         |          |        |   |
| (-)-BORNEOL   | Branches | --      | --       |        | *   |
| <b>Activities (3)</b>   |          |         |          |        |   |
| Antiacetylcholinesterase IC38=164 ug/ml                       |          |         |          |        |   |
| Insect-Repellent  |          |         |          |        |   |
| Pesticide   |          |         |          |        |   |
| 10-NONACOSANOL  | Branches | --      | --       |        | *   |

**Activities (16)**

|                                 |  |
|---------------------------------|--|
| Acidulant                       | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Antibacterial 5,000 ppm         |  |
| Antiotitic                      | Martindale's 28th  |
| Antisalmonella                  |  |
| Antivaginitic 1-2%              |  |
| Expectorant                     | Martindale's 28th  |
| Fungicide                       | Martindale's 29th  |
| Keratitogenic                   |  |
| Mucolytic                       | Martindale's 29th  |
| Osteolytic                      |  |
| Perfumery FEMA 6,000-40,000 ppm | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Pesticide                       |  |
| Protisticide                    | Martindale's 29th  |
| Spermicide                      | Martindale's 28th  |
| Ulcerogenic                     | HerbalGram No. 20, page 9.   |
| Verrucolytic                    |  |

## ALPHA-EUDESOL

Wood

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## ALPHA-THUJAPLICIN

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**Activities (1)**

Antitumor

## ASCORBIC-ACID

Branches

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**Activities (112)**

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| 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.   |

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| Antidote (Lead)                            | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antidote (Paraquat)                        | Martindale's 28th  |
| Antieczemic 3.5-5 g/day                    | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiedemic 1 g/man/day                     | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiencephalitic                           | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| 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              |  |
| Antimaaculitic                             |  |
| 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.   |
| Antiosteoarthritic 1 g 2x/day              | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antiosteoporotic 500 mg/day                |  |
| Antioxidant 100 ppm                        |  |
| Antiparkinsonian 1 g 2-3x/day              |  |
| Antiparotitic                              | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antiperiodontitic 1 g 2x/day               | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Antipneumonic                              | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Antipodriac                                | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antipoliomyelitic                          | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antipyretic                                | Economic & Medicinal Plant Research, 6: 189.   |
| Antiradicular                              | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antiretinotic                              |  |
| Antirheumatic                              |  |
| Antirhinitic 1,000 mg 3x/day               |  |
| Antiscorbutic 10 mg/man/day                | Martindale's 28th  |
| Antiseptic MIC=3.3-217 mg/ml               | Martindale's 28th  |
| Antiseptic 4-8 g/day                       | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antishingles                               | Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.   |
| Antispasmodic 500-5,000 mg/day             |  |
| Antistress 500-1,000 mg                    |  |
| Antisyndrome-X 1-4 g/day                   | Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95 |
| Antitumor (Gastric)                        |  |
| Antitumor (Lung)                           |  |
| Antiulcer                                  |  |
| Antiviral 1-5 g/day                        |  |
| Apoptotic 1-10 mM                          |  |
| Asthma-preventive 1,000 mg/day/orl         | Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).   |
| Beta-Adrenergic Receptor Blocker           |  |
| Beta-Glucuronidase-Inhibitor 1.5 g/day/man |  |

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

BETA-EUDESOL

Wood

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**Activities (13)**

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| AntiEBV                       |  |
| Antianoxic ED60=300 orl mus   | Yamahara, J., Matsuda, H., Naitoh, Y., Fujimura, H., and Tamai, Y. 1990. Antianoxic Action and Active Constituents of Atractylodis Lanceae Rhizoma. Chem. Pharm. Bull. 38(7): 2033-2034, 1990. |
| Antimutagenic ID50=0.09 uM/ml |  |
| Antipeptic                    | Chem & Pharm. Bull., 34: 3854, 1986.   |
| Antisalmonella >0.18 uM/ml    |  |
| Antitumor-Promoter?           |  |
| Antiulcer                     |  |
| CNS-Inhibitor                 |  |
| Calcium-Antagonist 40 uM mus  |  |
| Hepatoprotective              |  |
| Neurogenic                    |  |
| Pesticide                     |  |
| Sedative                      |  |

BETA-SITOSTEROL

Branches

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**Activities (47)**

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

BETA-THUJAPLICIN

Wood

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BORNEOL

Branches

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**Activities (35)**

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

BORNYL-ACETATE

Branches

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\*

**Activities (12)**

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

**Activities (9)**

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

**Activities (41)**

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

|                  |          |        |          |       |   |
|------------------|----------|--------|----------|-------|---|
| D-ALPHA-PINENE   | Branches | --     | --       | *     |   |
| D-ALPHA-THUJONE  | Branches | --     | --       | *     |   |
| D-CHIRO-INOSITOL | Branches | --     | --       | *     |   |
| EO               | Branches | 6000.0 | 10000.0  | -0.16 | * |
| FAT              | Seed     | --     | 150000.0 | -0.61 | * |
| FORMIC-ACID      | Branches | --     | --       | *     |   |

| Activities (13)       |  |
|-----------------------|--|
| Acaricide             |  |
| Antiseptic            |  |
| Antisynoptic          |  |
| Astringent            | Merck 11th Edition   |
| Corrosive             | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Counterirritant       | Merck 11th Edition   |
| FLavor FEMA 500-2,500 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Fungistat             | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Fungitoxic            | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Irritant              |  |
| Pesticide             |  |
| Preservative          | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Toxic                 | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |

|                 |          |    |    |   |
|-----------------|----------|----|----|---|
| GAMMA-EUDES MOL | Wood     | -- | -- | * |
| INOSITOL        | Branches | -- | -- | * |

| Activities (8)                   |  |
|----------------------------------|--|
| Antiallopecic                    |  |
| Anticirrhotic                    |  |
| Antidiabetic?                    | Martindale's 29th  |
| Antineuropathic? 2 g/day         | Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.   |
| Cholesterolytic 2,000 mg/man/day |  |
| Lipotropic                       | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Sweetener                        | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| Ubiquiot                         | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.                                 |

|                 |          |    |    |   |
|-----------------|----------|----|----|---|
| ISOTHUJONE      | Branches | -- | -- | * |
| ISOVALERIC-ACID | Branches | -- | -- | * |

| Activities (5)   |  |
|------------------|--|
| FLavor FEMA 1-16 | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  |
| Irritant         | Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253. |
| Perfumery        | Merck 11th Edition   |
| Sedative         |  |
| Tranquilizer     | Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.  |

|                         |          |    |    |   |
|-------------------------|----------|----|----|---|
| JUNIPERIC-ACID          | Branches | -- | -- | * |
| KAEMPFEROL-3-RHAMNOSIDE | Branches | -- | -- | * |

| Activities (2)                        |   |    |    |   |
|---------------------------------------|---|----|----|---|
| Aldose-Reductase-Inhibitor IC43=1uM   | Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888. |    |    |   |
| Aldose-Reductase-Inhibitor IC85=10 uM |   |    |    |   |
| L-ALPHA-FENCHENE                      | Branches  | -- | -- | * |
| L-ALPHA-THUJENE                       | Branches  | -- | -- | * |
| L-FENCHONE                            | Branches  | -- | -- | * |
| L-LEUKANTHELMITOL                     | Branches  | -- | -- | * |
| LIMONENE                              | Branches  | -- | -- | * |

**Activities (60)**

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

| Activities (3)                        |   |    |    |  |   |
|---------------------------------------|---|----|----|--|---|
| Cancer-Preventive                     | Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.   |    |    |  |   |
| Demulcent                             |   |    |    |  |   |
| Hypocholesterolemic                   |   |    |    |  |   |
| MYO-INOSITOL                          | Branches  | -- | -- |  | * |
| MYRICETIN-3-GLYCOSIDE                 | Branches  | -- | -- |  | * |
| MYRICETIN-3-RHAMNOSIDE                | Branches  | -- | -- |  | * |
| Activities (5)                        |   |    |    |  |   |
| Antibacterial                         |   |    |    |  |   |
| Diuretic                              |   |    |    |  |   |
| Pesticide                             |   |    |    |  |   |
| Protisticide                          |   |    |    |  |   |
| Spermicide                            |   |    |    |  |   |
| OCCIDENTALOL                          | Wood  | -- | -- |  | * |
| OCCIDION                              | Wood  | -- | -- |  | * |
| OCCIDOL                               | Branches  | -- | -- |  | * |
| OLEIC-ACID                            | Branches  | -- | -- |  | * |
| Activities (18)                       |   |    |    |  |   |
| 5-Alpha-Reductase-Inhibitor           |   |    |    |  |   |
| Allergenic                            |   |    |    |  |   |
| Alpha-Reductase-Inhibitor             |   |    |    |  |   |
| Anemiagenic                           |   |    |    |  |   |
| Antiallopecic                         |   |    |    |  |   |
| Antiandrogenic                        |   |    |    |  |   |
| Antiinflammatory<br>IC50=21 uM        |   |    |    |  |   |
| Antileukotriene-D4<br>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                              |   |    |    |  |   |
| PENTAHYDROXYFLAVONE-3'-BETA-GLYCOSIDE | Plant   | -- | -- |  | * |
| PINITOL                               | Branches  | -- | -- |  | * |
| Activities (5)                        |   |    |    |  |   |
| Antidiabetic                          |   |    |    |  |   |
| Antifeedant                           |   |    |    |  |   |
| Expectorant FEA                       |   |    |    |  |   |
| Insectifuge                           | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.  |    |    |  |   |
| Pesticide                             |   |    |    |  |   |
| PINOPICRIN                            | Branches  | -- | -- |  | * |
| PINOTANNIC-ACID                       | Branches  | -- | -- |  | * |
| QUERCITRIN                            | Branches  | -- | -- |  | * |

**Activities (44)**ACE-Inhibitor  
IC50=0.67 mM/Aldose-Reductase-Inhibitor IC50=2 uM Terashima, S., Shimizu, M., Nakayama, H., Ishikura, M., et al. 1990. Studies on Aldose Reductase Inhibitors from Medicinal Plant of 'Sinfito,' *Potentilla candicans*, and Further Synthesis of Their Related Compounds. *Chem. Pharm. Bull* 38(10):2733-2736, 1990

Aldose-Reductase-Inhibitor IC55=0.15 uM

Aldose-Reductase-Inhibitor 0.1-100 uM

Aldose-Reductase-Inhibitor 0.5-4 ug/ml

Aldose-Reductase-Inhibitor IC50=64 uM rat

Al-Khalil, S. 1996. Inhibition of Lens Alkaloids Reductase by Protopine Alkaloids. *Saudi Pharm J*, 4(1): 45-47.

Aldose-Reductase-Inhibitor IC55=0.1 uM

Antiarrhythmic

Antibacterial

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

Anticataract

Antiedemic

Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.

Antifeedant IC52=&lt;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.

Antiflu

Leung, A.Y., *Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics*, John Wiley & Sons, New York, 1980.

Antihemorrhagic

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

Antihepatotoxic

Antiherpetic

Economic &amp; Medicinal Plant Research, 5: 198.

Antiinflammatory

Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.

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.

Antioxidant IC50=120 uM

Antipurpuric

Antispasmodic

Antistaphylococcic 0.41%

Antithrombogenic

Antitumor

Antiulcer

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

Antiviral

CNS-Depressant

Cancer-Preventive

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

Cardiotonic

Choleretic

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

Cyclooxygenase-Activator 200 uM

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

Detoxicant

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

Diuretic

Huang, K. C. 1993. *The Pharmacology of Chinese Herbs.* CRC Press, Boca Raton, FL 388 pp.

Dye

Merck 11th Edition

Hemostat

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

Hepatotonic

Hypoglycemic

Economic &amp; Medicinal Plant Research, 6: 189.

Hypotensive

Insectiphile

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

MAO-A-Inhibitor

MAO-Inhibitor

Paralytic

Pesticide

Vasopressor

QUINOVIGEC-ACID

Plant

--

--

\*

RESIN

Branches

--

--

\*

RESINIC-ACID

Branches

--

--

\*

RHODOXANTHIN

Leaf

--

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**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.

| Activities (5)   |   |  |  |  |
|------------------|---|--|--|--|
| Antibacterial    |   |  |  |  |
| Antihelicobacter |   |  |  |  |
| Antiseptic       |   |  |  |  |
| Antiulcer        |   |  |  |  |
| Perfumery        | Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry |  |  |  |

|              |          |    |    |   |
|--------------|----------|----|----|---|
| SABINIC-ACID | Branches | -- | -- | * |
|--------------|----------|----|----|---|

|            |          |    |    |   |
|------------|----------|----|----|---|
| SEQUOYITOL | Branches | -- | -- | * |
|------------|----------|----|----|---|

|        |          |    |         |   |
|--------|----------|----|---------|---|
| TANNIN | Branches | -- | 59000.0 | * |
|--------|----------|----|---------|---|

| Activities (35)                           |   |  |  |  |
|---|---|--|--|--|
| Anthelmintic                              |   |  |  |  |
| AntiHIV                                   |   |  |  |  |
| Antibacterial                             |   |  |  |  |
| Anticancer                                |   |  |  |  |
| Anticariogenic                            |   |  |  |  |
| Antidiarrheic                             |   |  |  |  |
| Antidysenteric                            |   |  |  |  |
| Antihepatotoxic                           |   |  |  |  |
| Antihypertensive                          |   |  |  |  |
| Antilipolytic                             |   |  |  |  |
| Antimutagenic                             |   |  |  |  |
| Antinephritic                             | Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. Chem. Pharm. Bull. 38(4): 1049-1052, 1990. |  |  |  |
| Antiphidic                                | Economic & Medicinal Plant Research, 5: 363.  |  |  |  |
| Antioxidant<br>IC50=1.44 ug/ml            |   |  |  |  |
| Antioxidant 1/3<br>quercetin              |   |  |  |  |
| Antiradicular 500<br>mg/kg/day orl mus    | Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. Chem. Pharm. Bull. 38(4): 1049-1052, 1990. |  |  |  |
| Antiradicular 1/3<br>quercetin            |   |  |  |  |
| Antirenitic                               | Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. Chem. Pharm. Bull. 38(4): 1049-1052, 1990. |  |  |  |
| Antitumor                                 |   |  |  |  |
| Antitumor-Promoter                        |   |  |  |  |
| Antiulcer                                 |   |  |  |  |
| Antiviral                                 |   |  |  |  |
| Cancer-Preventive                         | HerbalGram No. 22 - Spring 1990, page 14.   |  |  |  |
| Carcinogenic                              |   |  |  |  |
| Chelator                                  |   |  |  |  |
| Cyclooxygenase-<br>Inhibitor              |   |  |  |  |
| Glucosyl-<br>Transferase-Inhibitor        |   |  |  |  |
| Hepatoprotective                          |   |  |  |  |
| Immunosuppressant                         |   |  |  |  |
| Lipoxygenase-<br>Inhibitor                |   |  |  |  |
| MAO-Inhibitor                             |   |  |  |  |
| Ornithine-<br>Decarboxylase-<br>Inhibitor |   |  |  |  |
| Pesticide                                 |   |  |  |  |
| Psychotropic                              | Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. Chem. Pharm. Bull. 38(4): 1049-1052, 1990. |  |  |  |
| Xanthine-Oxidase-<br>Inhibitor            |   |  |  |  |

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|-----------|----------|----|----|---|
| TERPINEOL | Branches | -- | -- | * |
|-----------|----------|----|----|---|

**Activities (18)**

|                               |  |
|-------------------------------|--|
| Analgesic 10-100 ug/ml        |  |
| Anesthetic 10-100 ug/ml       |  |
| Antiallergenic                |  |
| Antiasthmatic                 |  |
| Antibacterial                 |  |
| Anticancer                    | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.                             |
| Antiproliferant               | Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.                             |
| Antiseptic                    | Merck 11th Edition   |
| Antispasmodic                 |  |
| Antitussive                   |  |
| Cholagogue                    |  |
| Culicide LC50=156-194 mg/l    |  |
| Expectorant                   |  |
| Insecticide LC50=156-194 mg/l |  |
| Insectifuge                   | Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990. |
| Larvicide LC50=156-194 mg/l   |  |
| Perfumery                     | Merck 11th Edition   |
| Pesticide                     |  |

|                 |          |    |    |   |
|-----------------|----------|----|----|---|
| THAPSIC-ACID    | Branches | -- | -- | * |
| VALERIANIC-ACID | Branches | -- | -- | * |

**Activities (1)**

Antispasmodic