

# List of All Chemicals

## **P** Rheum palmatum (Polygonaceae)

### Common name(s)

Chinese Rhubarb

### 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
	All				
(+)-CATECHIN	Rhizome	--	14275.0	1.0	*
<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					
Antioxidant					
Antiperoxidant					
Antiprostaglandin IC50=40-943 uM (cf indomethacin IC50=1 uM)					
Antiradicular					
Antiulcer					
Beta-Adrenergic Receptor Blocker 10 uM (weak activity)					
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					
Cardiotonic					
Cyclooxygenase-Inhibitor					
Cytotoxic TC50=>100 ug/ml					
Dermatitigenic					
Hemostat					
Hepatoprotective					
Immunostimulant					
NO-Inhibitor IC11=250 uM					
Neuroprotective 1-10 uM					
Phagocytotic					
Vasoconstrictor					
Xanthine-Oxidase-Inhibitor					
cAMP-Phosphodiesterase-Inhibitor					
1'-O-GALLOYL-SUCROSE	Rhizome	--	12.5		*
1,2,6-TRI-O-GALLOYL-BETA-D-GLUCOSE	Rhizome	--	553.1		*

Activities (4)				
Antioxidant	Okamura, H., Mimura, A., Yakou, Y., Niwano, M., and Takahara, Y. 1992. Antioxidant Activity of Tannins and Flavonoids in <i>Eucalyptus rostrata</i> . <i>Phytochemistry</i> . 33(3): 557-561. 1993.			
Beta-Adrenergic Receptor Blocker 10 uM	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? <i>Phytochemistry</i> , 44(3): 441-447.			
Topoisomerase-II-Inhibitor IC100=0.2 uM	Kashiwada, Y., Nonaka, G. I., Nishioka, I., Lee, J. H., Bori, I., Fukushima, Y., Bastow, K. F., Lee, K. H. 1993. Tannins as Potent Inhibitors of DNA Topoisomerase II in vitro. <i>J Pharm Sci</i> , 82: 487-492.			
Xanthine-Oxidase-Inhibitor IC50=39 uM	Hatano, T., Yasuhara, T., Yoshihara, R., Agata, I., Noro, T., and Okuda, T. 1989. Effects of Interaction of Tannins with Co-existing Substances.VII. Inhibitory Effects of Tannins Related Polyphenols on Xanthine Oxidase. <i>Chem. Pharm. Bull.</i> 38(5): 1224-1229			
1,3-DIEMTHYL-NAPHTHALENE	Rhizome	--	0.5	*
1,5-DIMETHYL-NAPHTHALENE	Rhizome	--	0.5	*
1-2-DI-O-GALLOYL-6-CINNAMOYL-BETA-D-GLUCOSE	Rhizome	--	96.9	*
1-6-DI-O-GALLOYL-2-O-CINNAMOYL-BETA-D-GLUCOSE	Rhizome	--	121.9	*
1-6-DI-O-GALLOYL-BETA-D-GLUCOSE	Rhizome	--	143.8	*
1-O-GALLOYL-2-O-CINNAMOYL-BETA-D-GLUCOSE	Rhizome	--	75.0	*
1-O-GALLOYL-6-O-CINNAMOYL-BETA-D-GLUCOSE	Rhizome	--	40.6	*
1-O-GALLOYL-FRUCTOSE	Rhizome	--	--	*
2,3,5-TRIMETHYL-NAPHTHALENE	Rhizome	--	0.5	*
2,6-DIMETHYL-NAPHTHALENE	Rhizome	--	0.5	*
2-METHYL-NAPHTHALENE	Rhizome	--	0.5	*
2-O-CINNAMOYL-1-O-GALLOYL-BETA-D-GLUCOPYRANOSE	Root	--	--	*
2-PENTYL-FURAN	Rhizome	--	0.5	*
2-PHENYLBENZALDEHYDE	Rhizome	--	0.5	*
2-PHENYLETHANOL	Rhizome	--	0.5	*
3,4-DIMETHOXY-BENZOIC-ACID	Rhizome	--	0.5	*
3,4-DIMETHYL-HEXAN-3,4-DIOL	Rhizome	--	0.5	*
3,5,4'-TRIHYDROXYSTILBENE-4'-O-BETA-D-GLUCOPYRANOSIDE	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
3-METHYL-DIBENZOTHIOPHENE	Rhizome	--	0.5	*
4'-O-GALLOYL-SUCROSE	Rhizome	--	28.1	*
4'-O-METHYL-PICEID	Root	--	248.0	*
4-(P-HYDROXYPHENYL)-2-BUTANONE-BETA-D-GLUCOSIDE	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
4-METHYL-DIBENZOTHIOPHENE	Rhizome	--	0.5	*
5-METHYL-2-FURFURAL	Rhizome	--	0.5	*
6-O-GALLOYL-GLUCOSE	Rhizome	--	46.9	*
6-O-GALLOYL-SUCROSE	Rhizome	25.0	125.0	*
8-GLUCOSYL-RHEIN-ANTHRONE	Root	--	--	*
ALIZARIN	Plant	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

**Activities (11)**

5-Alpha-Reductase-Inhibitor

Allergenic

Antibacterial

Antileukemic

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

Antimutagenic

Economic &amp; Medicinal Plant Research, 6: 235.

Antioxidant

Journal of Nutritional and Environmental Medicine. 1997. Volume 7: 79.

Calcium-Antagonist 1/5  
aloeemodin

Dye

Merck 11th Edition

Hepatoprotective

Journal of Nutritional and Environmental Medicine. 1997. Volume 7: 79.

Pesticide

Pigment

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

ALOE-EMODIN

Tissue  
Culture

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**Activities (24)**Antibacterial MIC=2-64  
ug/ml

Antiherpetic

Antileukemic

Antisalmonella

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

Antiseptic MIC=2-64 ug/ml

Antistaphylococccic MIC=2-  
64 ug/ml

Antitumor 1 ug/mL

Antiviral

Arylamine-N-  
Acetyltransferase-InhibitorCalcium-Antagonist (strong  
activity)Candidicide MIC=25-250  
ug/ml

Cathartic

Merck 11th Edition

Cytotoxic 20 ppm

Estrogenic

Fungicide MIC=25-250  
ug/ml

Genotoxic

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

Laxative

Mutagenic

Pesticide

Purgative ED50=>59.6  
mg/kg orl mus

Termitifuge

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

Topoisomerase-II-Inhibitor 1  
mM

Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.

Topoisomerase-II-Inhibitor  
IC50=741 uM/ml

Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica &amp; Biophysica Acta, 1428: 406-414.

Tuberculostatic

Pakistan Encyclopedia Planta Medica. 1986.

ALOE-EMODIN

Rhizome

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**Activities (24)**

Antibacterial MIC=2-64 ug/ml	
Antiherpetic	
Antileukemic	
Antisalmonella	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiseptic MIC=2-64 ug/ml	
Antistaphylococic MIC=2-64 ug/ml	
Antitumor 1 ug/mL	
Antiviral	
Arylamine-N-Acetyltransferase-Inhibitor	
Calcium-Antagonist (strong activity)	
Candidicide MIC=25-250 ug/ml	
Cathartic	Merck 11th Edition
Cytotoxic 20 ppm	
Estrogenic	
Fungicide MIC=25-250 ug/ml	
Genotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Laxative	
Mutagenic	
Pesticide	
Purgative ED50=>59.6 mg/kg orl mus	
Termitifuge	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Topoisomerase-II-Inhibitor 1 mM	Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.
Topoisomerase-II-Inhibitor IC50=741 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Tuberculostatic	Pakistan Encyclopedia Planta Medica. 1986.

ALOE-EMODIN                      Root            --            2030.0                      \*

**Activities (24)**

Antibacterial MIC=2-64 ug/ml	
Antiherpetic	
Antileukemic	
Antisalmonella	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiseptic MIC=2-64 ug/ml	
Antistaphylococic MIC=2-64 ug/ml	
Antitumor 1 ug/mL	
Antiviral	
Arylamine-N-Acetyltransferase-Inhibitor	
Calcium-Antagonist (strong activity)	
Candidicide MIC=25-250 ug/ml	
Cathartic	Merck 11th Edition
Cytotoxic 20 ppm	
Estrogenic	
Fungicide MIC=25-250 ug/ml	
Genotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Laxative	
Mutagenic	
Pesticide	
Purgative ED50=>59.6 mg/kg orl mus	
Termitifuge	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Topoisomerase-II-Inhibitor 1 mM	Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.
Topoisomerase-II-Inhibitor IC50=741 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Tuberculostatic	Pakistan Encyclopedia Planta Medica. 1986.

ALOE-EMODIN-8-BETA-D-GLUCOSIDE	Plant	--	--	J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.
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ALOE-EMODIN-8-O-BETA-D-GLUCOSIDE	Rhizome	--	--	*
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ALOE-EMODIN-DIANTHRONE	Root	--	--	*
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ALOE-EMODIN-DIANTHRONE-GLYCOSIDE	Root	--	--	*
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ALOE-EMODIN-MONOGLYCOSIDE	Root	--	--	*
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ALPHA-CADINENE	Rhizome	--	0.5	*
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ALPHA-COPAENE	Rhizome	--	50.0	*
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ALPHA-HIMACHALENE	Rhizome	--	1.0	*
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ALPHA-HUMULENE	Rhizome	--	1.0	*
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**Activities (2)**

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

ALPHA-MUUROLENE	Rhizome	--	19.0	*
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ALPHA-SANTALENE	Rhizome	--	1.5	*
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ALPHA-TERPINEOL	Rhizome	--	2.0	-1.07	*
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**Activities (36)**

Allergenic	
AntiNF-kB	
AntiTNF	
Antibacterial MBC=200 ug/ml	
Antigenotoxic 40-400 mg/kg orl mus	
Antihepatotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiinflammatory	
Antioxidant	
Antiradicular	
Antisalmonella MIC=200 ug/ml	
Antiseptic 200 ug/ml	
Antispasmodic	
Antitumor	
Antiyeast	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Carminative	Merck 11th Edition
Dermatitigenic	
Digestive	Michael Castleman 1991. The Healing Herbs. Rodale Press, Emmaus, PA 436 pp.
Estrogenic	Australian J. Med Herbalism, 7: 29.
Expectorant	Martindale's 29th
Fungicide	Wolf, R.B. Effects Of p-Methoxycinnamaldehyde From Star Anise And Related Cinnamic Acid Derivatives On Velvetleaf Germination. Journal of Natural Products, 49(1): 156-158, 1986.
Gastrostimulant	
Hepatotoxic 695 mg/kg orl mus/days	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.
Insecticide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Irritant	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Lactagogue	
Leucocytogenic	Economic & Medicinal Plant Research, 1: 124.
Mutagenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Nephroprotective	Toxicol Appl. Pharmacol. 1996.
Pesticide	
Secretagogue	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Secretolytic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Sweetener 13 x sucrose	
Sympathomimetic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

ANTHRAQUINONE	Bulb	--	--	*
ANTHRAQUINONE	Rhizome	--	--	*
ANTHRAQUINONES	Rhizome	--	--	*

**Activities (6)**

Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Bird-Repellent	Merck 11th Edition
Carcinogenic	
Laxative	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Litholytic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Toxic	Jim Duke's personal files.

ANTHRAQUINONES	Root	14000.0	50000.0	1.35	*
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**Activities (6)**

Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Bird-Repellent	Merck 11th Edition
Carcinogenic	
Laxative	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Litholytic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Toxic	Jim Duke's personal files.

AR-CURCUMENE Rhizome -- 5.0 -1.0 \*

**Activities (3)**

Antirhinoviral IC50=1,750?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). Journal of Natural Products, 57(5): 658-662, 1994.
Antiulcer IC45=100 mg/kg	Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... Yakugaku Zasshi 112: 645-655 (1992).
Antiviral IC50=1,750?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). Journal of Natural Products, 57(5): 658-662, 1994.

BENZALDEHYDE Rhizome -- 1.5 \*

**Activities (24)**

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

BENZYL-ALCOHOL Rhizome -- 0.5 \*

**Activities (9)**

Allergenic	Martindale's 29th
Anesthetic	Martindale's 28th
Antiodontalgic	Martindale's 28th
Antipruritic	
Antiseptic	Martindale's 29th
FLavor Fema 200-1,200	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Pesticide	
Sedative	Jim Duke's personal files.

BETA-ELEMENE Rhizome -- 0.5 -1.34 \*

**Activities (5)**

Anticancer (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Antigliomic	
Antiproliferant	
Antitumor (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.
Apoptotic	

BETA-EUDESOL Rhizome -- 0.5 -1.0 \*



**Activities (13)**

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-GLUCOGALLIN	Rhizome	--	43.8		*
BETA-GURJUNENE	Rhizome	--	0.5	-1.0	*
BUTANOL	Rhizome	--	0.5		*
CADINA-1,4-DIENE	Rhizome	--	4.0		*
CALAMENENE	Rhizome	--	9.0	-1.0	*
CALCIUM	Rhizome	9630.0	12400.0	1.19	*

**Activities (28)**

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

CEDROL	Rhizome	--	1.0		*
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**Activities (3)**

Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Termiticide	Mater Org (Berl), 24:301, 1989.

CHROMONES	Rhizome	--	--		*
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**Activities (5)**

Calcium-Antagonist

Cathartic

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

Immunosuppressant

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

Topoisomerase-II-Inhibitor  
1 mM

Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? *Mutat Res*, 371: 165-173.

Topoisomerase-II-Inhibitor  
IC50=61 uM/ml

Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. *Biochimica & Biophysica Acta*, 1428: 406-414.

CHRY SOPHANEIN Root -- 34.0 \*

CHRY SOPHANIC-ACID Root -- 2100.0 -1.0 \*

**Activities (6)**

Antispasmodic

Calcium-Antagonist

Fungicide

Keratitigenic

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Oculoirritant

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Pesticide

CHRY SOPHANIC-ACID Petiole -- -- \*

**Activities (6)**

Antispasmodic

Calcium-Antagonist

Fungicide

Keratitigenic

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Oculoirritant

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Pesticide

CHRY SOPHANIC-ACID Bulb -- -- \*

**Activities (6)**

Antispasmodic

Calcium-Antagonist

Fungicide

Keratitigenic

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Oculoirritant

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Pesticide

CHRY SOPHANIC-ACID Rhizome -- -- \*

**Activities (6)**

Antispasmodic

Calcium-Antagonist

Fungicide

Keratitigenic

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Oculoirritant

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Pesticide

CHRY SOPHANIC-ACID Tissue Culture -- -- \*

**Activities (6)**

Antispasmodic

Calcium-Antagonist

Fungicide

Keratitigenic

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Oculoirritant

Mitchell, J. and Rook, A.J. 1923. *Botanical Dermatology: plants and plant products injurious to the skin*. Vancouver: Greengrass, 1979. xiii, 787 p.: ill.

Pesticide

CHRY SOPHANIC-ACID-1-O-BETA-D-GLUCOSIDE Rhizome -- -- \*

CHRY SOPHANIC-ACID-8-O-BETA-D-GLUCOSIDE	Rhizome	--	--		*
CHRY SOPHANOL	Root	690.0	3190.0		*
<b>Activities (10)</b>					
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Antiseptic					
Calcium-Antagonist 5/6 aloeemodin					
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Cathartic					
Hemostat					
Pesticide					
Pigment	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Purgative ED50=>500 mg/kg orl mus					
Termitifuge	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
CHRY SOPHANOL-DIANTHRONE	Root	--	--		*
CINNAMIC-ACID	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)	
<b>Activities (18)</b>					
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. Sankyō Kenkyūsho Nempo, 43: 99-110.				
Allergenic					
Anesthetic					
Antibacterial	Martindale's 28th				
Antiinflammatory					
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.				
Antispasmodic	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.				
Choleretic					
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
FLavor FEMA 4-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Fungicide					
Herbicide					
Laxative					
Lipoxygenase-Inhibitor					
Pesticide					
Tyrosinase-Inhibitor ID50=700 uM					
Vermifuge					
CINNAMIC-ALDEHYDE	Rhizome	--	19.0		*
CITREOROSIN	Rhizome	--	--		*
COPPER	Rhizome	6.0	10.0	-0.12	*
<b>Activities (12)</b>					
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					
Schizophrenigenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
CYCLOHEXANONE	Rhizome	--	0.5		*
D-CATECHOL	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)	

DECANAL	Rhizome	--	0.5		*
DECANOIC-ACID	Rhizome	--	2.5		*
<b>Activities (3)</b>					
Flavor FEMA <1-1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Nematicide	Shoyakugaku Zasshi, 45: 270.				
Pesticide					
DECANOL	Rhizome	--	0.5		*
<b>Activities (2)</b>					
Nematicide MLC 100-700 ug/ml	Shoyakugaku Zasshi, 44: 183.				
Pesticide					
DELTA-CADINENE	Rhizome	--	28.5	-0.75	*
<b>Activities (9)</b>					
Aldose-Reductase-Inhibitor					
Antiacne					
Antibacterial MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.				
Anticariogenic MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.				
Antistreptococcic					
Cytochrome-P450-Inducer					
P450-Inducer					
Pesticide					
Testosterone-Inducer					
DIRHEIN	Rhizome	--	--		*
DOCOSANE	Rhizome	--	0.5		*
DODECANE	Rhizome	--	0.5		*
DODECANOIC-ACID	Rhizome	--	0.5		*
<b>Activities (1)</b>					
Flavor FEMA 2-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
DODECANOL	Rhizome	--	0.5		*
<b>Activities (1)</b>					
Flavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
EICOSANE	Rhizome	--	0.5		*
EMODIN	Root	--	690.0	-1.21	*
<b>Activities (58)</b>					
AGEs-Inhibitor IC50=118 uM					
Aldose-Reductase-Inhibitor IC50=15.9 uM					
Allergenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
AntiMRSA MIC 2-64 ug/ml					
Antiaggregant					
Antiangiogenic					
Antibacterial					
Anticytomegalovirus ED50=1.1 ug/ml					
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Antiinflammatory 15 mg/kg					
Antileukemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antilymphomic					
Antimutagenic					
Antineoplastic					
Antiplateque ED50=1.1 ug/ml					

Antiproliferant IC50=20-30 uM	
Antisarcotic	
Antiseptic	
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.
Antisprout	
Antitumor (Breast)	
Antiulcer 15 mg/kg	
Antivaginitic	Tillotson, A. K. (with Abel, Jr., R., Tillotson, N.H., Bajracharya, V.M.B.). 2001. The One Earth Herbal Sourcebook: Everything You Need to Know about Chinese, Western, and Ayurvedic Herbal Treatments. Twin Streams, Kensington Publishing Corp. NY,NY. 596 pp
Antiviral ED50=1.1 ug/ml	
Antiviral EC50=1.1	
CNS-Depressant 15 mg/kg ipr mus	
COX-2-Inhibitor	
Cathartic	Merck 11th Edition
Collagenase-Inhibitor IC50=40 uM	
Cytotoxic CD50=2.6 ug/ml	
Differentiator IC50=20-30 uM	
Estrogenic	
Genotoxic	
Gonadotropic	
Hypolipidemic	
Immunostimulant	
Immunosuppressant	
Leucocytogenic	
MMP-2-Inhibitor	
MMP-7-Inhibitor	
MMP-9-Inhibitor	
Mutagenic	
NO-Inhibitor IC50=60.7 uM	
PGE2-Inhibitor	
PTK-Inhibitor 10-100 uM	
PTK-Inhibitor IC50=19-37 uM	
Pesticide	
Prostaglandin-Synthesis-Inhibitor IC50=23 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Protein-Kinase-C-Inhibitor IC50=25 uM	
Purgative ED50=>500 mg/kg orl mus	
Styptic	
Topoisomerase-II-Inhibitor 1 mM	Mueller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.
Topoisomerase-II-Inhibitor IC50=7 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Trichomonicide	
Tyrosine-Kinase-Inhibitor	
Vasodilator	
Vasorelaxant	
iNOS-Inhibitor	

EMODIN

Petiole

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\*

#### Activities (58)

AGEs-Inhibitor IC50=118 uM	
Aldose-Reductase-Inhibitor IC50=15.9 uM	
Allergenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
AntiMRSA MIC 2-64 ug/ml	
Antiaggregant	
Antiangiogenic	
Antibacterial	
Anticytomegalovirus ED50=1.1 ug/ml	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antiinflammatory 15 mg/kg	



Antiaggregant	
Antiangiogenic	
Antibacterial	
Anticytomegalovirus ED50=1.1 ug/ml	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antiinflammatory 15 mg/kg	
Antileukemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antilymphomic	
Antimutagenic	
Antineoplastic	
Antiplaque ED50=1.1 ug/ml	
Antiproliferant IC50=20- 30 uM	
Antisarcomic	
Antiseptic	
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.
Antisprout	
Antitumor (Breast)	
Antiulcer 15 mg/kg	
Antivaginitic	Tillotson, A. K. (with Abel, Jr., R., Tillotson, N.H., Bajracharya, V.M.B.). 2001. The One Earth Herbal Sourcebook: Everything You Need to Know about Chinese, Western, and Ayurvedic Herbal Treatments. Twin Streams, Kensington Publishing Corp. NY,NY. 596 pp
Antiviral ED50=1.1 ug/ml	
Antiviral EC50=1.1	
CNS-Depressant 15 mg/kg ipr mus	
COX-2-Inhibitor	
Cathartic	Merck 11th Edition
Collagenase-Inhibitor IC50=40 uM	
Cytotoxic CD50=2.6 ug/ml	
Differentiator IC50=20- 30 uM	
Estrogenic	
Genotoxic	
Gonadotropic	
Hypolipidemic	
Immunostimulant	
Immunosuppressant	
Leucocytogenic	
MMP-2-Inhibitor	
MMP-7-Inhibitor	
MMP-9-Inhibitor	
Mutagenic	
NO-Inhibitor IC50=60.7 uM	
PGE2-Inhibitor	
PTK-Inhibitor 10-100 uM	
PTK-Inhibitor IC50=19-37 uM	
Pesticide	
Prostaglandin-Synthesis- Inhibitor IC50=23 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Protein-Kinase-C-Inhibitor IC50=25 uM	
Purgative ED50=>500 mg/kg orl mus	
Styptic	
Topoisomerase-II- Inhibitor 1 mM	Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.
Topoisomerase-II- Inhibitor IC50=7 uM/ml	Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.
Trichomonicide	
Tyrosine-Kinase-Inhibitor	
Vasodilator	
Vasorelaxant	
iNOS-Inhibitor	

EMODIN

Rhizome -- --

\*

**Activities (58)**

AGEs-Inhibitor IC50=118  
uM

Aldose-Reductase-  
Inhibitor IC50=15.9 uM

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

AntiMRSA MIC 2-64 ug/ml

Antiaggregant

Antiangiogenic

Antibacterial

Anticytomegalovirus  
ED50=1.1 ug/ml

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

Antiinflammatory 15  
mg/kg

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

Antilymphomic

Antimutagenic

Antineoplastic

Antiplaque ED50=1.1  
ug/ml

Antiproliferant IC50=20-  
30 uM

Antisarcomic

Antiseptic

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.

Antisprout

Antitumor (Breast)

Antiulcer 15 mg/kg

Antivaginitic Tillotson, A. K. (with Abel, Jr., R., Tillotson, N.H., Bajracharya, V.M.B.). 2001. The One Earth Herbal Sourcebook: Everything You Need to Know about Chinese, Western, and Ayurvedic Herbal Treatments. Twin Streams, Kensington Publishing Corp. NY,NY. 596 pp

Antiviral ED50=1.1 ug/ml

Antiviral EC50=1.1

CNS-Depressant 15  
mg/kg ipr mus

COX-2-Inhibitor

Cathartic Merck 11th Edition

Collagenase-Inhibitor  
IC50=40 uM

Cytotoxic CD50=2.6  
ug/ml

Differentiator IC50=20-  
30 uM

Estrogenic

Genotoxic

Gonadotropic

Hypolipidemic

Immunostimulant

Immunosuppressant

Leucocytogenic

MMP-2-Inhibitor

MMP-7-Inhibitor

MMP-9-Inhibitor

Mutagenic

NO-Inhibitor IC50=60.7  
uM

PGE2-Inhibitor

PTK-Inhibitor 10-100 uM

PTK-Inhibitor IC50=19-37  
uM

Pesticide

Prostaglandin-Synthesis-  
Inhibitor IC50=23 uM/ml Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.

Protein-Kinase-C-Inhibitor  
IC50=25 uM

Purgative ED50=>500  
mg/kg orl mus

Styptic

Topoisomerase-II-  
Inhibitor 1 mM Muller, S. O., Eckert, I., Lutz, W. K., Stopper, H. 1996. Genotoxicity of the Laxative Drug Components Emodin, Aloe-emodin and Danthron in Mammalian Cells: Topoisomerase II Mediated? Mutat Res, 371: 165-173.

Topoisomerase-II-  
Inhibitor IC50=7 uM/ml Mueller, S. O., Stopper, H. 1999. Characterization of the Genotoxicity of Anthraquinones in Mammalian Cells. Biochimica & Biophysica Acta, 1428: 406-414.

Trichomonicide

Tyrosine-Kinase-Inhibitor



Vasodilator Vasorelaxant iNOS-Inhibitor					
EMODIN-1-O-BETA-D-GLUCOSIDE	Rhizome	--	--		*
EMODIN-DIANTHRONE	Root	--	--		*
EMODIN-GLYCOSIDE	Root	--	--		*
EMODIN-MONOGLYCOSIDE	Root	--	--		*
EO	Rhizome	--	500.0	-0.67	*
ETHANOL	Rhizome	--	0.5		*

#### Activities (24)

Allergenic	
Anesthetic 4,000 orl cat	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.
Anesthetic 6,000 orl 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.
Anhydrotic	Martindale's 29th
Antiatherosclerotic	
Antibacterial	Martindale's 28th
Antipruritic	Martindale's 28th
Antiseptic	Merck 11th Edition
CNS-Depressant	Martindale's 28th
Expectorant	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.
Hepatotoxic	Martindale's 29th
Hypertensive >1 drink/day	
Hypnotic Antidote=Naloxone	Martindale's 29th
Hypocalcemic 4,000 orl 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.
Hypotensive 1 drink/day	
Mucotropic	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.
Neurolytic	Merck 11th Edition
Pesticide	
Rubefacient	Martindale's 29th
Sclerosant	Martindale's 29th
Surfactant	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.
Teratogenic 6,000 orl dog	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.
Tremorilytic	Martindale's 28th
Ulcerogenic 5 ml/kg (50%) orl rat	

ETHYL-ACETATE	Rhizome	--	5.0		*
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#### Activities (6)

Antispasmodic	
CNS-Depressant	Martindale's 29th
Carminative	
FLavor FEMA 20-1,500	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Respirotoxic >400 ppm	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Stimulant	

FURFURAL	Rhizome	--	0.5	-1.0	*
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#### Activities (6)

Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insecticide	
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.
Pesticide	

GALLIC-ACID	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
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**Activities (62)**

ACE-Inhibitor IC50=7.7 mM/l	
Analgesic	
AntiHIV	
AntiMRSA	
Antiadenovirus	Economic & Medicinal Plant Research, 5: 194.
Antiallergenic	Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? Int Arch Allergy Appl Immunol 94: 262-265, 1991.
Antianaphylactic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiangiogenic	
Antiasthmatic	Watt, J.M., and Breyer-Brandwijk, M.G. The Medicinal and Poisonous Plants of Southern and Eastern Africa. 1962.
Antibacterial MIC=1,000 ug/ml	
Antibronchitic	Dorsch, W., Wagner, H. New Antiasthmatic Drugs from Traditional Medicine? Int Arch Allergy Appl Immunol 94: 262-265, 1991.
Anticancer	
Anticarcinomic ED50=3	
Antiescherichic	
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antiflu	Economic & Medicinal Plant Research, 5: 194.
Antihepatotoxic	Okuda, T., Yoshida, T., and Hatano, T. Antioxidant Effects of Tannins and Related Polyphenols. Phenolic Compounds in Food and Their Effects on Health, Ch.7 p.93.
Antiherpetic EC50=>10 ug/ml	
Antiinflammatory	Kroes, B.H., et al. 1991. Anti-Inflammatory Activity of Gallic Acid. Planta Medica, 58(6): 499.
Antileishmanic EC50=4.4 ug/ml	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antinitrosaminic	
Antioxidant IC44=33 ppm	
Antioxidant 7 x quercetin	
Antioxidant 2/3 BHA	
Antiperiodontitic 10 ug/ml	
Antiperoxidant IC50=69 uM	
Antipolio	Economic & Medicinal Plant Research, 5: 194.
Antiproteolytic 10 ug/ml	
Antiradicular 7 x quercetin	
Antiradicular IC50=4.9 uM	
Antiseptic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antistaphylococcic MIC=1,000 ug/ml	
Antitumor	
Antitumor-Promoter	
Antiviral	
Apoptotic	
Astringent	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.
Bacteristat	Lamikanra, A., Ogundaini, A.O., and Ogungbamila*, F.O. Antibacterial Constituents of Alchornea cordifolia Leaves. Phytotherapy Research 4(5): 198.
Bronchodilator	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.
Candidicide	
Carcinogenic	
Choleretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cyclooxygenase- Inhibitor	
Cytotoxic 500 uM	
Floral-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Gram(+)-icide MIC=1,000 ug/ml	
Gram(-)-icide MIC=1,000 ug/ml	
Hemostat	
Hepatoprotective	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Immunomodulator	
Immunostimulant	McKenna, D. J., Hughes, K., and Jones, K. 2000. Green Tea Monograph. Alternative Therapies, 6(3): 61-82.
Immunosuppressant	

Insulin-Sparing	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
NO-Inhibitor IC-26=250 uM	
Nephrotoxic	Martindale's 29th
Pesticide	
Styptic	
Topoisomerase-I-Inhibitor	Hamada, S. I., Kataoka, T., Woo, J. T., Yamada, A., Yoshida, T., Nishimura, T., Otake, N., Nagai, K. 1997. Immunosuppressive Effects by Gallic Acid and Chebulagic Acid on CTL-Mediated Cytotoxicity. Biol Pharm Bull, 20: 1017-1019.
Xanthine-Oxidase-Inhibitor IC50=24 uM	Hatano, T., Yasuhara, T., Yoshihara, R., Agata, I., Noro, T., and Okuda, T. 1989. Effects of Interaction of Tannins with Co-existing Substances.VII. Inhibitory Effects of Tannins Related Polyphenols on Xanthine Oxidase. Chem. Pharm. Bull. 38(5): 1224-1229

GAMMA-CADINENE	Rhizome	--	0.5	*	
GAMMA-MUUROLENE	Rhizome	--	9.0	-1.0	*
GLUCOSE	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)	

Activities (7)	
Acetylcholinergic	
Antiedemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihepatotoxic	Merck 11th Edition
Antiketotic	Merck 11th Edition
Antivaricose	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hyperglycemic	Merck 11th Edition
Memory-Enhancer	Science News, 138: 189, 1990.

HENEICOSANE	Rhizome	--	0.5	*
HEPTADECANE	Rhizome	--	0.5	*
HEPTANAL	Rhizome	--	0.5	*
HEPTANOL	Rhizome	--	1.5	*
HEPTYL-ACETATE	Rhizome	--	0.5	*

Activities (1)	
FLavor FEMA 3-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

HEXADECAHYDROPYRANE	Rhizome	--	1.0	*
HEXADECANE	Rhizome	--	0.5	*
HEXADECANOIC-ACID	Rhizome	--	110.0	*
HEXANAL	Rhizome	--	0.5	*

Activities (5)	
Antibacterial MBC=800 ug/ml	
Antisalmonella MIC=400 ug/ml	
Antiseptic 400-800 ug/ml	
FLavor FEMA <1-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

HEXANOIC-ACID	Rhizome	--	2.5	*
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Activities (2)	
Acidulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
FLavor FEMA 2-450	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

HEXANOL	Rhizome	--	0.5	*
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Activities (3)					
Antiseptic					
FLavor FEMA 0.2-25					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide					

HYPERIN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
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Activities (14)					
Aldose-Reductase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antibacterial					
Antiinflammatory					
Antiischemic					
Antioxidant					
Antiradicular					
Antitussive					
Antiviral					
Capillarifortificant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Capillarigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Diuretic					
Hepatoprotective IC80=30 ug/ml	Mayumi Ito (nee Someya), et al. 1990. Hepatoprotective Compounds from Canarium album and Euphorbia nematocypha. Chem. Pharm. Bull. 38(8): 2201-2203, 1990.				
Hypotensive					
Pesticide					

IRON	Rhizome	100.0	180.0	-0.54	*
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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/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Prooxidant					

ISOMENTHOL	Rhizome	--	0.5		*
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Activities (1)					
Antiacetylcholinesterase IC29=1.2 mM					

M-CRESOL	Rhizome	--	0.5		*
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Activities (8)					
Antiseptic	Merck 11th Edition				
Fumigant	Merck 11th Edition				
Hemolytic 3,000 ppm	Martindale's 28th				
Irritant	Martindale's 28th				
Parasiticide					
Perfumery 0.10%	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Rodenticide LD50=1,100 cut rat					

MAGNESIUM	Rhizome	1980.0	2560.0	0.94	*
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Activities (65)					
AntiCFS					
AntiLyme 400-1,000 mg					
AntiMS					
AntiPMS 400-800 mg/day/wmn/orl					
AntiPMS 400-800 mg/day/wmn orl					
AntiRaynaud's 280-350 mg/day					
Antiaggregant 400 mg/day					
Antialcoholic					

Antianginal 400 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antianorectic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antianxiety 400 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiarrhythmic 400 mg/day	
Antiarthritic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiatherosclerotic 400 mg/day	
Anticephalagic	
Anticlimacteric 500-750 mg/day	
Anticonvulsant	Facciola, S. 1998. Cornucopia - A Source Book of Edible Plants. Kampong Publications, Vista CA. 713 pp.
Anticoronary 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidepressant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidiabetic 400-800 mg/man/day	
Antidysmenorrheic 100 mg 4 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiendometriotic 500 mg/day	
Antienterotic	
Antiepileptic 450 mg/day	
Antifatigue	
Antifibromyalgic 200-300 mg 3x/day	
Antigastroic	
Antiglaucomic	
Antihyperkinetic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihypertensive	
Antihypoglycemic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiinflammatory 100 mg 4 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antilithic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimastalgic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimenopausal 500-750 mg/day	
Antimigraine 200 mg/day/man	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antimitral-valve-prolapse	
Antinephrolytic	
Antineurotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiosteoporotic 500-1,000 mg/day/wmn/orl	
Antiplateque 500-1,000 mg/day	
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	

## MANGANESE

Rhizome 19.0 46.0 -0.53 \*

**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

Rhizome -- 0.5 -1.0 \*

**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 Livingstone, 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	
Antihalitosis	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.
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. <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	<i>Shoyakugaku Zasshi</i> , 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	

METHYL-EUGENOL                      Rhizome   0.5            27.0            -1.0            \*

**Activities (20)**

Anesthetic	
Antibacterial	<i>Internat. J. Oriental Med.</i> 15(4): 199, 1990+
Anticonvulsant	
Antidote (Strychnine)	
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antioxidant EC50=100 u/l	
Antiradicular EC50=100 u/l	
Antiseptic	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli.</i> Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
FLavor FEMA 5-15	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Fungistat 100 ug/ml	Laekeman, G.M., Van Hoof, L., Haemers, A., Vanden Berghe, D.A., Herman, A.G., and Vlietinck, A.J. Eugenol a Valuable Compound for In Vitro Experimental Research and Worthwhile for Further In Vivo Investigation. <i>Phytotherapy Research</i> 4(3): 93, 1990.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Myorelaxant	<i>Fitoterapia</i> No.61: 254, 1990.
Narcotic	
Nematicide MIC=1 mg/ml	<i>Shoyakugaku Zasshi</i> , 44: 183.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Sedative	

METHYL-HEXADECANOATE                      Rhizome   --            1.5            \*

METHYL-LINOLEATE                      Rhizome   --            1.5            \*

METHYL-OCTADECANOATE	Rhizome	--	47.0	*	
METHYL-TRIDECANOATE	Rhizome	--	0.5	*	
NAPHTHALENE-GLYCOSIDES	Rhizome	--	--	*	
NONADECANE	Rhizome	--	0.5	*	
NONANAL	Rhizome	--	1.5	-1.0	*
NONANOIC-ACID	Rhizome	--	3.0	*	

#### Activities (2)

Flavor FEMA 1-15	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

OCTADECANE	Rhizome	0.5	2.0	*
OCTAN-3-OL	Rhizome	--	0.5	*
OCTANAL	Rhizome	--	0.5	*
OCTANOIC-ACID	Rhizome	--	0.5	*

#### Activities (5)

Candidicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Flavor FEMA 3-20	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	

P-CRESOL	Rhizome	--	0.5	*
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#### Activities (8)

Allelochemic IC50=1.13 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.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiseptic	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.
Flavor FEMA <1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Parasiticide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Rodenticide LD50=1,100 cut rat	

P-CYMENE	Rhizome	--	0.5	-0.52	*
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Activities (16)				
Analgesic	Martindale's 28th			
Antiacetylcholinesterase IC40=1.2 mM				
Antibacillary				
Antibacterial				
Antiflu				
Antirheumatalgic	Martindale's 28th			
Antiviral				
FLavor FEMA 12-250	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry			
Fungicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.			
Herbicide IC50=50 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.			
Insectifuge	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.			
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.			
Laxative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.			
Pesticide				
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.			
Trichomonicide LD100=50 ug/ml				

PAEONOL	Rhizome	--	80.0	*
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Activities (20)				
Adaptogenic				
Analgesic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antiatherosclerotic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Antibacterial				
Antiedemic				
Antigastric				
Antiinflammatory				
Antimutagenic				
Antipyretic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Antistaphylococcic				
Antistress	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antivascularitic				
Diuretic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Fungicide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Hemostat	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Hypothermic				
Immunomodulator				
Pesticide				
Sedative	Oriental Materia Medica (three volumes by Dr. Hsu and collaborators)			

PALMIDIN-A	Root	--	--	*
PALMIDIN-B	Root	--	--	*
PALMIDIN-C	Root	--	--	*
PALMIDIN-D	Root	--	--	*
PENTADECANAL	Rhizome	--	0.5	*
PENTADECANE	Rhizome	--	0.5	*
PENTADECANOIC-ACID	Rhizome	--	12.5	*

Activities (1)				
Antioxidant IC40=60				
PHENOL	Rhizome	--	0.5	*

**Activities (26)**

Analgesic	Martindale's 29th
Anesthetic	
AntiMS	Martindale's 29th
Antibacterial	
Antihemorrhoidal	Martindale's 28th
Antihydrocoele	Martindale's 29th
Antiincontinence	Martindale's 29th
Antionychogryphotic	Martindale's 28th
Antiotitic	Martindale's 28th
Antioxidant	Jim Duke's personal files.
Antiprostatic	Martindale's 29th
Antipyruvetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiseptic	
Antisinusitic	Martindale's 28th
Antispastic	Martindale's 28th
Antiviral	Martindale's 29th
Antiwrinkle	Martindale's 28th
CNS-Depressant	Martindale's 29th
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	
Emetic	Martindale's 29th
Fungicide	Martindale's 29th
Hemolytic 5,400 ppm	Martindale's 28th
Pesticide	
Rodenticide LD50=1,040 cut rat	
Vasodilator	

PHENYLBUTANONE-GLYCOSIDES Rhizome -- -- \*

PHYSCION Root -- 1660.0 -1.0 \*

**Activities (5)**

Antiseptic  
Calcium-Antagonist 5/6 aloeeodin  
Cathartic  
Pesticide  
Purgative ED50=>500 mg/kg orl mus

PHYSCION Rhizome -- -- \*

**Activities (5)**

Antiseptic  
Calcium-Antagonist 5/6 aloeeodin  
Cathartic  
Pesticide  
Purgative ED50=>500 mg/kg orl mus

PHYSCION Tissue Culture -- -- \*

**Activities (5)**

Antiseptic  
Calcium-Antagonist 5/6 aloeeodin  
Cathartic  
Pesticide  
Purgative ED50=>500 mg/kg orl mus

PHYSCION-8-GENTIOBIOSIDE Root -- -- Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

PHYSCION-8-GLUCOSIDE Plant -- -- Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

PHYSCION-8-O-BETA-D-GENTIOBIOSIDE Root -- -- \*

PHYSCION-DIANTHRONE	Root	--	--		*
PHYSCION-DIGLUCOSIDE	Root	--	--		*
PHYSCION-DIGLYCOSIDE	Root	--	--		*
PHYSCION-MONOGLUCOSIDE	Root	--	--		*
PHYSCIONIN	Root	--	29.9		*
POTASSIUM	Rhizome	6330.0	21600.0	0.96	*

**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	

PULMATIN	Root	--	24.9		*
QUERCITRIN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)

**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=<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 & 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 & 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

RHAPONTICIN Root -- -- \*

**Activities (1)**Estrogenic ANON. 1948-1976. *The Wealth of India raw materials.* Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

RHAPONTIN Root -- 464.7 \*

RHEIDIN-A Root -- -- \*

RHEIDIN-B Root -- -- \*

RHEIDIN-C Root -- -- \*

RHEIN	Root	--	14300.0	1.0	*
<b>Activities (18)</b>					
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Anticarcinomic					
Anticariogenic					
Anticytomegalovirus ED50=1.1 ug/ml					
Antineoplastic					
Antiplatelet ED50=0.6 ug/ml					
Antiseptic					
Antitumor					
Antiviral EC50=1.1					
Antiviral ED50=0.61 ug/ml					
Calcium-Antagonist 9/10 aloemodin					
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Cathartic					
Cytotoxic CD50=3.4 ug/ml					
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Pesticide					
Proteinase-Inhibitor					
Purgative ED50=97.5 mg/kg orl mus					
RHEIN	Rhizome	--	--		*
<b>Activities (18)</b>					
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Anticarcinomic					
Anticariogenic					
Anticytomegalovirus ED50=1.1 ug/ml					
Antineoplastic					
Antiplatelet ED50=0.6 ug/ml					
Antiseptic					
Antitumor					
Antiviral EC50=1.1					
Antiviral ED50=0.61 ug/ml					
Calcium-Antagonist 9/10 aloemodin					
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.				
Cathartic					
Cytotoxic CD50=3.4 ug/ml					
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Pesticide					
Proteinase-Inhibitor					
Purgative ED50=97.5 mg/kg orl mus					
RHEIN-8-O-BETA-D-GLUCOSIDE	Rhizome	--	--		*
RHEIN-ANTHRONE	Root	--	--		*
RHEIN-MONOGLYCOSIDE	Root	--	--		*
RHEINOSIDE-A	Leaf	--	--		*
RHEINOSIDE-A	Rhizome	--	--		*
RHEINOSIDE-C	Rhizome	--	--		*
RHEINOSIDE-D	Rhizome	--	--		*
RHEINOSIDE-D	Stem	--	--		*
RHEINOSIDES	Root	--	12900.0		*
RHEOSMIN	Root	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
RHEUM-PECTIC-POLYSACCHARIDE	Stem	--	--		*

RHEUM-POLYSACCHARIDE-DHP-1	Rhizome	--	--	*
RHEUM-POLYSACCHARIDE-DNP-2	Rhizome	--	--	*
SAFROLE	Rhizome	--	2.0	*

#### Activities (29)

Anesthetic	
Antiaggregant IC50=110 uM	Janssens, J., Laekeman, G.M., Pieters, L.A.C., Totte, J., Herman, A.G., and Vlietinck, A.J. 1990. Nutmeg Oil: Identification and Quantitation of its Most Active Constituents as Inhibitors of Platelet Aggregation. <i>J. of Ethnopharmacology</i> , 29: 179-188, 1990.
Antibacterial	
Anticonvulsant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiseptic	Merck 11th Edition
CNS-Depressant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
CNS-Stimulant	List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Calcium-Antagonist IC50=58 uM	
Calcium-Antagonist IC50=57 uM gpg	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Merck 11th Edition
Carminative	
Controlled	HerbalGram No. 20, page 15.
Cytochrome-P450- Inducer	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Cytochrome-P488- Inducer	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
DNA-Binder	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Hepatocarcinogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Hepatoregenerative	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Hepatotoxic	Martindale's 29th
Hypothermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Irritant	Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments</i> . Facts on File, New York. 199 pp.
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>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.</i>
Pediculicide	Merck 11th Edition
Perfumery	Merck 11th Edition
Pesticide	
Psychoactive	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>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.</i>
Tremorigenic	

SENNIDIN-A	Root	--	--	*
SENNIDIN-B	Root	--	--	*
SENNIDIN-C	Root	--	--	*
SENNIDIN-D	Root	--	--	*
SENNOSIDE	Rhizome	--	--	*

#### Activities (2)

Cathartic	
Laxative -30 mg/man/day	Martindale's 28th

SENNOSIDE-A	Root	2000.0	75600.0	*
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#### Activities (1)

Purgative ED50=13.5 mg/kg orl mus

SENNOSIDE-A	Rhizome	100.0	16600.0	*
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#### Activities (1)

Purgative ED50=13.5 mg/kg orl mus

SENNOSIDE-B	Root	8500.0	31400.0		*
<b>Activities (1)</b>					
Purgative ED50=13.9 mg/kg orl mus					
SENNOSIDE-B	Rhizome	20.0	10000.0		*
<b>Activities (1)</b>					
Purgative ED50=13.9 mg/kg orl mus					
SENNOSIDE-C	Rhizome	--	--		*
<b>Activities (1)</b>					
Purgative ED50=13.3 mg/kg orl mus					
SENNOSIDE-C	Root	--	--		*
<b>Activities (1)</b>					
Purgative ED50=13.3 mg/kg orl mus					
SENNOSIDE-D	Rhizome	--	--		*
<b>Activities (1)</b>					
Purgative ED50=15.8 mg/kg orl mus					
SENNOSIDE-D	Root	--	--		*
<b>Activities (1)</b>					
Purgative ED50=15.8 mg/kg orl mus					
SENNOSIDE-E	Rhizome	--	--		*
<b>Activities (1)</b>					
Purgative ED50=15.8 mg/kg orl mus					
SENNOSIDE-E	Root	--	--		*
<b>Activities (1)</b>					
Purgative ED50=15.8 mg/kg orl mus					
SENNOSIDE-F	Root	--	--		*
<b>Activities (1)</b>					
Purgative ED50=16.1 mg/kg orl mus					
SENNOSIDE-F	Rhizome	--	--		*
<b>Activities (1)</b>					
Purgative ED50=16.1 mg/kg orl mus					
SENNOSIDES-A+B	Rhizome	--	--		*
SODIUM	Rhizome	140.0	175.0	-0.43	*
<b>Activities (1)</b>					
Hypertensive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
STILBENE-GLYCOSIDES	Rhizome	--	--		*
TANNINS	Root	50000.0	100000.0	-1.09	Abstract (See species file)
TETRACOSANE	Rhizome	--	1.0		*
TETRADECANOIC-ACID	Rhizome	--	10.5		*

TETRADECANOL	Rhizome	--	0.5	*
TETRAMETHYL-PYRAZINE	Rhizome	--	1.0	*
<b>Activities (22)</b>				
Antianginal ED88=100-200 mg man	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.			
Antihypertensive	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.			
Antihistaminic 1 mg/kg	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Antibacterial	Recio, M. C., Rios, J. L., and Villar, A., A review of some antimicrobial compounds isolated from medicinal plants reported in the literature 1978-1988, <i>Phytotherapy Research</i> , 3(4), 1989, 117-125.			
Anticholinergic				
Antidysmenorrhoeic				
Antiemebolic				
Antimetastatic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Antispasmodic				
Arteriodilator	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.			
Calcium-Antagonist	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.			
Cardiac	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.			
Cardiotonic				
Diuretic				
Hypotensive 20-May				
Pesticide				
Schistosomicide				
Uterosedative 10-50 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. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.			
Vasodilator	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.			

TETRARIN	Root	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
TORREYOL	Rhizome	--	0.5	*

<b>Activities (2)</b>				
Pesticide				
Termiticide	Material und Organismen , 24: 1, 1989.			

TRICOSANE	Rhizome	--	0.5	*
TRIDECANAL	Rhizome	--	0.5	*
TRIDECANE	Rhizome	--	0.5	*
TRIDECANOIC-ACID	Rhizome	--	0.5	*

<b>Activities (2)</b>				
Antioxidant IC85=60				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry			

UNDECANE	Rhizome	--	0.5	*
UNDECANOIC-ACID	Rhizome	--	6.0	*
ZINC	Rhizome	9.0	10.0	-0.44 *

<b>Activities (77)</b>				
ACE-Inhibitor				
Analgesic				
AntiBPH 25-60 mg/day				
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			
AntiHIV				
Antiacne 135 mg/day				
Antiacrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th			
Antialcoholic				
Antialopepic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			
Antialzheimeran 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antiangiogenic				



Antianorexic	Martindale's 29th
Antiarthritic 50 mg/3x/day/orl/man	
Anticanker 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 30 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticoeliac	Martindale's 28th
Anticold 50 mg	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticoilitic	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	
Antioesity 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiosteoporotic	
Antiperiodontitic	
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
Insulinogenic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Leptingenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. <i>J. Pharm. Pharmacol.</i> 42: 657-659, 1990.
NF-kB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Testosteronigenic 60 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Trichomonicide	Martindale's 29th
Vulnerary	Martindale's 28th