

# List of All Chemicals

## **P** Thymus vulgaris (Lamiaceae)

### Common name(s)

Garden Thyme; Common Thyme; Thyme

### How used

Food

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

Chemical	Part All parts ...	Low PPM	High PPM	StdDev	*Reference
1,8-CINEOL	Essential Oil	--	32900.0	-0.75	*
2,6,6-TRIMETHYL-BICYCLO(3,1,1)-HEPTA-2-ENE	Essential Oil	--	--		*
3,3',4,4'-TETRAHYDROXY-5,5'-DI-ISO-PROPYL-2,2'-DIMETHYL-BIPHENYL	Leaf	--	35.0		*
3,3',4,4'-TETRAONE-5,5'-DI-ISO-PROPYL-2,2'-DIMETHYL-BIPHENYL	Leaf	--	3.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3,4,4'-TRIHIDROXY-5,5'-DI-ISO-PROPYL-2,2'-DIMETHYL-BIPHENYL	Leaf	--	1.0		*
4'-HYDROXY-5,5'-DI-ISO-PROPYL-2,2'-DIMETHYL-BIPHENYL-3,4-DIONE	Leaf	--	9.0		*
4'5-DIHYDROXY-3',6,7-TRIMETHOXYFLAVONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<b>Activities (3)</b>					
Antirhinoviral					
Antiviral					
Pesticide					
4'5-DIHYDROXY-6,7,8-TRIMETHOXYFLAVONE	Leaf	--	5.5		*
4'5-DIHYDROXY-7-METHOXYFLAVONE	Leaf	--	43.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4,4'-DIHYDROXY-5,5'-DI-ISO-PROPYL-2,2'-DIMETHYL-BIPHENYL-3,6-DIONE	Leaf	--	--		*
4-BETA-D-GLUCOSIDE-HYDROXYBENZOIC-ACID	Leaf	--	--		*
4-HYDROXYBENZOYL-GLUCOSE	Leaf	--	--		*
4-O-BETA-D-GLUCOSIDE-PROTocatechuic-ACID	Leaf	--	--		*
4-TERPINEOL	Plant	73.0	8320.0	1.0	*
<b>Activities (8)</b>					
Antiasthmatic					
Antioxidant					
Antiradicular					
Diuretic	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.				
FLavor FEMA 20-100	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Insectifuge	Bowers, W.S., Ortego, F., You, X., and Evans, P.H. Insect Repellents From The Chinese Prickly Ash Zanthoxylum bungeanum. Journal of Natural Products, 56(6): 935-938, 1993.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Pesticide					

5,4'-DIHYDROXY-6,7,8,3'-  
TETRAMETHOXYFLAVONE

Plant -- --

Chemical Constituents of Oriental Herbs (3 diff. books)

**Activities (2)**

Fungistat Weidenborner, M., Hindorf, H., Jha, H.C., and Tsotsonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus *Aspergillus*. *Phytochemistry*. 29(4): 1103-1105.  
Pesticide

5,5'-DI-ISO-PROPYL-2,2'-  
DIMETHYL-BIPHENYL-3,3',4,4'-  
TETRAONE

Leaf -- 3.0 \*

5-HYDROXY-4',7-  
DIMETHOXYFLAVONE

Leaf -- 1.0 \*

6-HYDROXY-LUTEIN

Plant -- -- Chemical Constituents of Oriental Herbs (3 diff. books)

6-HYDROXY-LUTEOLIN

Leaf -- -- \*

**Activities (2)**

Aldose-Reductase-Inhibitor IC53=1 uM Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. *Phytochemistry*, 23: 1885-1888.  
Aldose-Reductase-Inhibitor IC87=10 uM Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. *Phytochemistry*, 23: 1885-1888.

8-DEMETHYL-THYMONIN

Plant -- -- \*

8-METHOXY-CIRSILINEOL

Leaf -- 7.4 \*

**Activities (2)**

Aldose-Reductase-Inhibitor 10 uM Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. *Biochem Pharmacol*, 31(23): 3807-3822.  
Antispasmodic

ALANINE

Plant -- -- Stitt, Paul. Why George should eat broccoli.

**Activities (3)**

Antioxidant Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. *Phytochemistry*. 27: 969-978.  
Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  
Oxidant Larson, R.A. 1987. Review Article Number 30. The Antioxidants of Higher Plants. *Phytochemistry*. 27: 969-978.

ALPHA-HYDROXY-LINOLENIC-ACID

Seed -- -- ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

ALPHA-LINOLENIC-ACID

Plant 6900.0 7452.0 0.18 USDA's Ag Handbook 8 and sequelae)

**Activities (15)**

5-Alpha-Reductase-Inhibitor  
Antiaggregant Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.  
Antihypertensive  
Antiinflammatory IC50=42 uM  
Antileukotriene-D4 IC50=42 uM  
Antimenorrhagic Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).  
Antimetastatic Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.  
Antiprostatitic Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).  
Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  
Hypotensive Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.  
Immunostimulant 0.12 ml/man/day Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.  
Lymphocytogenic 0.5 ug/ml Cunane, S. and Thompson, L. U., eds. 1995. Flaxseed in Human Nutrition. AOCS Press, Champaign IL. 384 pp.  
Propepic  
Prostaglandin-Synthesis-Inhibitor 39.5 g/day/hmn Ferretti, A., Flanagan, V. P. 1996. Antithromboxane Activity of Dietary Alpha-linolenic Acid: A Pilot Study. *Prostaglandins Leukotrienes Essential Fatty Acids*, 54(6): 451-455. ARS, USDA.  
Vasodilator

ALPHA-PHELLANDRENE

Plant 50.0 425.0 1.79 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities (11)	
Antibacterial	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Antistaphylococcic	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Dermal	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Emetic	
FLavor FEMA 10-130	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Insectiphile	Pakistan Encyclopedia Planta Medica. 1986.
Irritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Laxative	
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	

ALPHA-PHELLANDRENE                      Essential Oil                      --                      12500.0                      -0.35                      \*

Activities (11)	
Antibacterial	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Antistaphylococcic	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Dermal	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Emetic	
FLavor FEMA 10-130	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Insectiphile	Pakistan Encyclopedia Planta Medica. 1986.
Irritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Laxative	
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	

ALPHA-PINENE                                      Plant                                      15.0                                      1598.0                                      0.65                                      \*

**Activities (28)**

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

ALPHA-PINENE                      Essential Oil                      --                      8000.0                      -0.49                      \*

**Activities (28)**

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

ALPHA-TERPINENE                      Essential Oil                      --                      --                      \*

**Activities (13)**

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml

Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Antiacetylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

FLavor FEMA 1-40

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

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery

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

Pesticide

Spasmogenic

ALPHA-TERPINENE

Plant

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Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

**Activities (13)**

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml

Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Antiacetylcholinesterase IC50=1.0 mM

Antinitrosaminic

Antispasmodic

FLavor FEMA 1-40

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

Insecticide 0.86 uM/fly

Insectifuge

P450-2B1-Inhibitor IC50=0.76 uM

Perfumery

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

Pesticide

Spasmogenic

ALPHA-TERPINEOL

Essential Oil

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**Activities (23)**

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

ALPHA-TERPINEOL	Plant	36.0	6500.0	4.55	*
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**Activities (23)**

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

ALPHA-THUJENE	Essential Oil	--	9200.0	-0.34	*
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ALUMINUM	Leaf	155.0	920.0	0.21	*
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**Activities (5)**

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

AMYL-ALCOHOL	Essential Oil	--	13900.0		*
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**Activities (1)**

FLavor FEMA 35-3,500 ppm	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
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ANETHOLE	Essential Oil	--	--		*
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Antiinflammatory #NAME?	
Antiinflammatory IC <sub>65</sub> =1,000 uM	
Antileukemic 20-50 uM	
Antimelanomic 1-50 uM	
Antimetastatic 1-50 uM	
Antimutagenic ID <sub>50</sub> =10-40 nM	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antimutagenic ID <sub>50</sub> =0.55 ug/ml	
Antioxidant 1.5 x Vit. E	
Antioxidant IC <sub>28.5</sub> =62.5 ug/ml	
Antiperistaltic	
Antiproliferant 1-50 uM	
Antiproliferant IC <sub>50</sub> =155 uM	
Antispasmodic EC <sub>50</sub> =1-5 uM	
Antistress 10 mg/kg	
Antithyroid	Jim Duke's personal files.
Antitumor 1-50 uM	
Antitumor (Breast) 1-50 uM	
Antitumor (Lung)	
Antitumor (Skin)	
Antiviral 20-54 ug/ml	
Anxiolytic 10 mg/kg	
Apoptotic 12-60 uM	
Aromatase-Inhibitor IC <sub>65</sub> =1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC <sub>50</sub> =~40 uM	
CNS-Depressant	
COX-1-Inhibitor IC <sub>65</sub> =1,000 uM	
COX-2-Inhibitor IC <sub>65</sub> >1,000 uM	
COX-2-Inhibitor <40 uM	
COX-2-Inhibitor IC <sub>50</sub> =<15 uM	
Calcium-Antagonist?	Biochimica & Biophysica Acta, 1115: 69, 1991.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic	
Cyclooxygenase-Inhibitor	
Cytochrome-P450-1A1-Inhibitor	
Cytotoxic IC <sub>88</sub> =10 ug/ml	Planta Medica, 57: A113, 1991.
Cytotoxic 1-50 uM	
Cytotoxic IC <sub>50</sub> =9.5 uM	
DNA-Protective	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator MIC=30 uM	
Differentiator IC <sub>40</sub> =40 uM	
Diuretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Estrogenic EC <sub>50</sub> =0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Estrogenic 16% genistein	
Estrogenic EC <sub>50</sub> =1 uM	
HIF-1alpha-Inhibitor	
Hyaluronidase-Inhibitor IC <sub>50</sub> + =50-250 uM	
Hypotensive	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
ICAM-1-Inhibitor	
IKK-Inhibitor	
Inotropic	
Interleukin-6-Inhibitor	
MAO-Inhibitor	
MAPK-Inhibitor	
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Mutagenic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
NADH-Oxidase-Inhibitor	

NF-kB-Inhibitor	
NO-Synthase-Inhibitor 5-50 uM	
Nodulation-Signal	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Ornithine-Decarboxylase-Inhibitor	
P21-Inducer 10-70 uM	
PKC-Inhibitor IC50=10 uM	
PTK-Inhibitor 10-100 uM	
Pesticide	
Polyamine-Synthesis-Inhibitor	
Progestational	
Protein-Kinase-C-Inhibitor IC50=10-40 uM	
Quinone-Reductase-Inducer 20 uM	Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. <i>Cancer Lett.</i> , 120 (2): 213-216.
Radioprotective	
Sedative 30-100 mg/kg	
Sunscreen	
TNF-alpha-Inhibitor IC50=3.27 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. <i>Toxicol Ind Health</i> , 14: 223-237.
Topoisomerase-II-Inhibitor 50 ug/ml	Azuma, Y., Onishi, Y., Sato, Y., Kizaki, H. 1995. Effects of Protein Tyrosine Kinase Inhibitors With Different Modes of Action on Topoisomerase Activity and Death of IL-2-Dependent CTLL-2-Cells. <i>J Biochemistry</i> , 118: 312-318.
Topoisomerase-II-Inhibitor IC28=18 uM	
Topoisomerase-II-Inhibitor IC45=180 uM	
Uterotrophic EC50=0.1-25 uM/l	<i>Journal of Medicinal Food</i> 2: 227.1999.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor 0.36 uM	
iNOS-Inhibitor IC50=<15 uM	

ASCORBIC-ACID                      Leaf                      --                      --                      -0.44                      \*

#### Activities (112)

Acidulant FEMA 6,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Aldose-Reductase-Inhibitor	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance.</i> 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. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance.</i> 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. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance.</i> 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. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Antiatherosclerotic	
Antibacterial	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.
Anticataract 350 mg/day	Werbach, M. 1993. <i>Healing with Food.</i> Harper Collins, New York, 443 pp.
Anticataract 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance.</i> 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	
Antidecubitic 500 mg/man/2x/day	Martindale's 28th

Antidementia	
Antidepressant 2,000 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antidiabetic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Aluminum)	Economic & Medicinal Plant Research, 6: 189.
Antidote (Cadmium)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (Paraquat)	Martindale's 28th
Antieczemic 3.5-5 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiedemic 1 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiencephalitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antienometriotic 2,000 mg/day	
Antifatigue 500-1,000 mg	
Antifibrotic 1,000-2,000 mg	
Antigallstone 1,000-3,000 mg/day	
Antigastritic	
Antigingivitic	
Antiglaucomic 2 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antihangover 1,000 mg	
Antihemorrhagic 1 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihepatitic 2-6 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antihepatotoxic	Economic & Medicinal Plant Research, 6: 189.
Antiherpetic 1-5 g/day	
Antihistaminic 2 g/day orl man	
Antihypertensive	
Antiinfertility 1 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinflammatory	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antileptic 1.5 g/man/day	Martindale's 28th
Antilithic 1,000-3,000 mg/day	
Antimaculitic	
Antimeasles	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimenopausal 500-5,000 mg/day	
Antimigraine	Martindale's 29th
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuramidase	
Antinitrosic 1 g/man/day	Martindale's 28th
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	
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Cold-preventive 1-2 g/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Collagenic	
Detoxicant	
Diuretic 700 mg/man/orl	
Fistula-Preventive	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Hypocholesterolemic 300-1,000 mg/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Hypoglycemic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypotensive 1,000 mg/man/day	
Immunomodulator	
Immunostimulant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Interferonogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Lithogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Mucolytic 1 g/woman/day	Martindale's 28th
Pesticide	
Uricosuric 4 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Urinary-Acidulant	Martindale's 29th
Vasodilator	
Vulnerary	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

ASH	Plant	113681.0	130809.0	0.18	USDA's Ag Handbook 8 and sequelae)
ASH	Leaf	21504.0	128000.0	0.16	*
BETA-CADINENE	Essential Oil	--	--		*
BETA-CAROTENE	Plant	24.0	25.0	-0.59	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

**Activities (53)**

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

BETA-CAROTENE                      Leaf                      4.0                      25.0                      -1.03                      \*

**Activities (53)**

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

BETA-CARYOPHYLLENE	Plant	15.0	605.0	-0.06	*
BETA-CARYOPHYLLENE	Essential Oil	--	17800.0	-0.56	*
BETA-PHELLANDRENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities (3)					
Expectorant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Fungicide	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.				
Perfumery	Merck 11th Edition				

BETA-PHELLANDRENE	Essential Oil	--	--		*
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Activities (3)					
Expectorant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Fungicide	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.				
Perfumery	Merck 11th Edition				

BETA-PINENE	Essential Oil	--	3400.0	-0.65	*
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Activities (13)					
Allergenic					
Antiinflammatory					
Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Antispasmodic					
Candidicide					
FLavor FEMA 15-600	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Herbicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.				
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Spasmogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Transdermal					

BETA-PINENE	Plant	15.0	420.0	0.02	*
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Activities (13)					
Allergenic					
Antiinflammatory					
Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Antispasmodic					
Candidicide					
FLavor FEMA 15-600	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Herbicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.				
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Spasmogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Transdermal					

BETA-SITOSTEROL	Leaf	1520.0	1600.0	-0.21	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
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**Activities (47)**

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

BETA-TERPINEOL                      Essential Oil                      --                      19800.0                      -1.0                      \*

**Activities (3)**

Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

BETA-TERPINEOL                      Plant                      79.0                      673.0                      Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.



Activities (3)					
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Pesticide					

BORNEOL                                      Essential Oil                      --                      --                      \*

Activities (35)					
(-)-Chronotropic 29 ug/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.				
(-)-Inotropic 29 ug/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.				
Allelochemic					
Analgesic					
Antiacetylcholine	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antibacterial 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 MIC=125 ug/ml					
Antifeedant					
Antiinflammatory					
Antiotitic					
Antipyretic					
Antisalmonella MIC=125 ug/ml					
Antispasmodic ED50=0.008 mg/ml					
Antistaphylococcic 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 MIC=250 ug/ml					
Choleretic					
FLavor FEMA<1	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Fungicide					
Hepatoprotective					
Herbicide IC50=470 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.				
Herbicide IC50=470 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.				
Inhalant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Insect-Repellent					
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.				
Myorelaxant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.				
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Pesticide					
Sedative	Medline (post 1990 searches filed in my computer)				
Tranquilizer					

BORNEOL                                      Leaf                                      15.0                      1462.0                      1.33                      \*

**Activities (35)**

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

BORNEOL-ACETATE	Essential Oil	--	--		*
BORNYL-ACETATE	Leaf	16.0	795.0	0.02	*

**Activities (12)**

(-)-Chronotropic 933 n/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
(-)-Inotropic 933 n/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antibacterial	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antispasmodic 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	

BORON	Plant	34.0	48.0	-0.33	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).
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**Activities (4)**

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

CAFFEIC-ACID	Leaf	--	16900.0	1.63	*
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**Activities (102)**

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

Antiaphidic	
Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	
Antioxidant 1/2 BHA	
Antiperoxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperoxidant IC35=200 ug/ml	
Antiperoxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. Phytochemistry. 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	Phytotherapy Research, 4: 73.
Antistaphylococcic	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	Cancer Research, 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
COX-2-Inhibitor IC32=100 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	

Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC98=25 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Tumorigenic	Jim Duke's personal files.
Vulnerary	
Xanthine-Oxidase-Inhibitor IC50=39.21 uM	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livinston, Edinburgh.

CALCIUM Plant 16935.0 22534.0 0.96 USDA's Ag Handbook 8 and sequelae)

**Activities (28)**

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

CALCIUM Leaf 2806.0 16700.0 -0.12 \*

**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	

CAMPESTEROL Plant -- 30.0 -0.6 Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

**Activities (2)**

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

CAMPHENE Essential Oil -- 4100.0 -0.57 \*

**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.

CAMPHENE Plant 15.0 375.0 0.04 \*

**Activities (9)**

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

CAMPHOR	Plant	5.0	45.0	-0.63	J. Ethnopharmacology, 39: 167.
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**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.

CAPRIC-ACID Plant 1200.0 1296.0 1.34 USDA's Ag Handbook 8 and sequelae)

**Activities (3)**

Fungicide  
Irritant  
Pesticide

CAPRYLIC-ACID Plant 2400.0 2592.0 -1.0 USDA's Ag Handbook 8 and sequelae)



**Activities (5)**

Antiseptic  
Candidicide 300 mg/man/12 x/day  
Fungicide  
Irritant  
Pesticide

CAR-3-ENE	Plant	127.0	1080.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
CAR-3-ENE	Essential Oil	--	31800.0	1.41	*
CAR-4-ENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
CAR-4-ENE	Essential Oil	--	--		*
CARBOHYDRATES	Plant	639400.0	690552.0	0.12	USDA's Ag Handbook 8 and sequelae)
CARBOHYDRATES	Leaf	116424.0	693000.0	0.65	*
CARVACROL	Essential Oil	16700.0	80200.0	-0.7	*

**Activities (37)**

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

CARVACROL

Shoot

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**Activities (37)**

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

CARVACROL                                  Plant                                  8.0                                  18720.0                                  1.72                                  \*

**Activities (37)**

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

CARVONE Plant -- -- Stitt, Paul. Why George should eat broccoli.

**Activities (19)**

Allergenic	
Antiacyetylcholinesterase IC50=1.4-1.8 mM	
Antiproliferative	
Antiseptic 1.5 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
CNS-Stimulant	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidistat	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
FLavor FEMA 80-3,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungistat	
Insecticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Sedative	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Trichomonicide LD100=300 ug/ml	
Vermicide	

CARYOPHYLLENE                      Essential Oil                      --                      13600.0                      -0.51                      \*

**Activities (31)**

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

CHLOROGENIC-ACID                      Shoot                      --                      --                      \*

**Activities (77)**

Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of <i>Chrysanthemum indicum</i> L. <i>Chem Pharm Bull</i> , 47(3): 340-345.
Allelochemic	
Allergenic	
Analgesic	
AntiEBV	Economic & Medicinal Plant Research, 6: 189.
AntiHIV	Economic & Medicinal Plant Research, 6: 189.
AntiLegionella	
Antiatherosclerotic	
Antibacterial	
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidiabetic	
Antifeedant	
Antigenotoxic	
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatotoxic	
Antiherpetic	Economic & Medicinal Plant Research, 5: 194.
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Antileukotriene	
Antimelanogenic	
Antimutagenic	
Antinitrosaminic	
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21.
Antioxidant IC80=12 uM	
Antioxidant IC50=54.2 uM	
Antiperoxidant IC50=36 uM	<i>Planta Medica</i> , 57: A54, 1991.
Antipolio	Jim Duke's personal files.
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 9 x quercetin	
Antiseptic	
Antisunburn	
Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC25=10 uM	
Antiulcer	Economic & Medicinal Plant Research, 6: 189.
Antiviral	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Autotoxic	
CNS-Active	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart</i> . 393 pp.
CNS-Stimulant 1/6 Caffeine	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart</i> . 393 pp.
Choleretic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Clastogenic	Friedman, M. and Dao, L. 1990. Effect of Autoclaving and Conventional and Microwave Baking on the Ergot Alkaloid and Chlorogenic Acid Contents of Morning Glory ( <i>Ipomoea tricolor</i> Cav. cv.) Heavenly Blue Seeds. <i>J. Agric. Food Chem</i> . 38: 805-808.
Collagen-Sparing	
Diuretic	
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Hepatoprotective	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Histamine-Inhibitor	

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

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

#### Activities (77)

Aldose-Reductase-Inhibitor IC50=1.8 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of <i>Chrysanthemum indicum</i> L. <i>Chem Pharm Bull</i> , 47(3): 340-345.
Allelochemic	
Allergenic	
Analgesic	
AntiEBV	<i>Economic &amp; Medicinal Plant Research</i> , 6: 189.
AntiHIV	<i>Economic &amp; Medicinal Plant Research</i> , 6: 189.
AntiLegionella	
Antiatherosclerotic	
Antibacterial	
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidiabetic	
Antifeedant	
Antigenotoxic	
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatotoxic	
Antihyperpetic	<i>Economic &amp; Medicinal Plant Research</i> , 5: 194.
Antihistaminic	
Antihypercholesterolemic	<i>Economic &amp; Medicinal Plant Research</i> , 6: 189.
Antihyperthyroid	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Antileukotriene	
Antimelanogenic	
Antimutagenic	
Antinitrosaminic	
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. <i>Phenolic Compounds in Food and Cancer Prevention. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21.
Antioxidant IC80=12 uM	
Antioxidant IC50=54.2 uM	
Antiperoxidant IC50=36 uM	<i>Planta Medica</i> , 57: A54, 1991.
Antipolio	Jim Duke's personal files.
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 9 x quercetin	
Antiseptic	
Antisunburn	
Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

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

CHROMIUM	Leaf	0.3	2.0	-0.48	*
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**Activities (24)**

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

CHRYSOERIOL                      Plant                      --                      --                      Stitt, Paul. Why George should eat broccoli.

**Activities (7)**

Aldose-Reductase-Inhibitor IC31=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Anticomplementary	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antioxidant	
Antirhinoviral	Economic & Medicinal Plant Research, 5: 197.
Antiviral	Economic & Medicinal Plant Research, 5: 197.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

CINEOLE                      Plant                      10.0                      4590.0                      0.64                      \*

CINNAMIC-ACID                      Plant                      --                      --                      Stitt, Paul. Why George should eat broccoli.

Activities (18)				
Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. Sankyo Kenkyusho Nempo, 43: 99-110.			
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				

CIRSILINEOL                      Leaf                      --                      --                      \*

Activities (10)				
Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. Biochem Pharmacol, 31(23): 3807-3822.			
Antiinflammatory IC~37=1,000 uM				
Antimalarial IC50=36 uM				
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
COX-1-Inhibitor IC37=1,000 uM				
COX-2-Inhibitor IC>37=1,000 uM				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Parasiticide IC50=36 uM				
Pesticide				
Plasmodicide IC50=36 uM				

CIRSIMARITIN                      Leaf                      --                      20.0                      \*

Activities (9)				
Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. Biochem Pharmacol, 31(23): 3807-3822.			
Aldose-Reductase-Inhibitor IC50=1.6 ug/ml cow	Okada, Y, et al. 1995. Search for Naturally Occurring Substances to Prevent the Complications of Diabetes. II. Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation. Chem Pharm Bull 43(8):1385-1387			
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, Phytotherapy Research, 3(4), 1989, 117-125.			
Antiinflammatory IC~50=1,000 uM				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
COX-1-Inhibitor IC50=1,000 uM				
COX-2-Inhibitor IC>50=1,000 uM				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Pesticide				

CIRSIMARITRIN                      Leaf                      --                      20.0                      Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

CITRAL                      Plant                      --                      --                      Stitt, Paul. Why George should eat broccoli.

**Activities (53)**

Allergenic	
Antiallergenic	
Antiallergic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antianaphylactic	
Antibacterial	
Anticancer	
Antihelicobacter	
Antiherpetic	
Antihistaminic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory	
Antileishmanic	
Antioxidant	
Antiseptic 5.2 x phenol	
Antishock	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antispasmodic	
Antitumor	
Antitumor (Colon)	
Antitumor (Liver)	
Antitumor (Skin)	
Antiulcer	
Antiviral	
Apoptotic	
Barbituate-Synergist	
Bronchorelaxant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	
Caspase-3-Inducer	
Chemopreventive	
Cytotoxic	
Estrogenic	
Expectorant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Flavor FEMA 4-170	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide MIC 625 ug/ml	
Glaucomagenic	
Glutathionigenic	
Herbicide IC50=115 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.
Myorelaxant 200 mg/kg	
NF-kB-Inhibitor	
NO-Inhibitor	
Nematicide IC52=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Nematicide MLC=100-260 ug/ml	Shoyakugaku Zasshi, 44: 183.
P450-2B1-Inhibitor IC50=1.19 uM	
Perfumery	Merck 11th Edition
Pesticide	
Prostatitigenic 185 mg/kg/day/3 ms	
Sedative ED 1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Sedative 1 mg/kg	
Teratogenic	
Trichomonicide LD100=150 ug/ml	
Trypanocide	
Tyrosinase-Inhibitor ID50=1.5 mM	
Tyrosinase-Inhibitor ID50=1,500 uM	

COBALT Leaf 2.0 11.3 -0.23 \*

**Activities (2)**

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

COPPER Plant 8.0 9.0 -0.56 USDA's Ag Handbook 8 and sequelae)

**Activities (12)**

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

COSMOSIIN Plant -- -- \*

**Activities (4)**

Aldose-Reductase-Inhibitor IC40=1 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Aldose-Reductase-Inhibitor IC99=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Antibacterial MIC=500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.
Candidicide MIC=500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.

COSMOSIIN Leaf -- -- Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

**Activities (4)**

Aldose-Reductase-Inhibitor IC40=1 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Aldose-Reductase-Inhibitor IC99=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Antibacterial MIC=500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.
Candidicide MIC=500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.

COUMARIN Essential Oil -- 3000.0 \*

**Activities (57)**

Aldose-Reductase-Inhibitor 10 ug/ml cow (weak activity, 11% inhibition)	Okada, Y. et al. 1995. Search for Naturally Occurring Substances to Prevent the Complications of Diabetes. II. Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation. <i>Chem Pharm Bull</i> 43(8):1385-1387
Allelochemic IC100=2 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds. <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Analgesic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.
Anesthetic	
Antiaggregant	
Antiandrogenic	<i>Planta Medica</i> , 56(6): 671, 1990.
Antibrucellosis	Gawron, A., Gorski*, G., Glowniak**, K. 1989. Increased proliferation of phytohaemagglutinin (PHA)-stimulated human leucocytes after 8-methoxypsoralen treatment. <i>J. Pharm. Pharmacol.</i> 42: 194-195, 1990.
Anticancer (Kidney) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Anticancer (Prostate) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antidiuretic	
Antiedemic	Shimizu *M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' ( <i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antiesherichic	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	Shimizu *M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' ( <i>Lavandula latifolia</i> Vill.)2). <i>Chem. Pharm. Bull.</i> 38(8): 2283-2284, 1990.
Antilymphedemic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antimelanomic 50 mg/day	
Antimetastatic 50 mg/man/day	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antimitotic	Pandeya, S.N. 1970. Biological Activity of Adamantyl Derivatives. <i>The Indian Journal of Pharmacy</i> , 33: 7.
Antimononucleotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antimutagenic	<i>Economic &amp; Medicinal Plant Research</i> , 6: 235.
Antimycoplasmotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antipsittacotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antipsoriac	Pandeya, S.N. 1970. Biological Activity of Adamantyl Derivatives. <i>The Indian Journal of Pharmacy</i> , 33: 7.
Antitoxoplasmotic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antitumor 50 mg/day	

Antitumor (GI)					
Antitumor (Kidney) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.				
Antitumor (Prostate) 400-7,000 mg/day	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.				
Bacteristat	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Bruchiphobe					
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.				
Carcinogenic 200 mg/kg orl mus	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.				
Cardiodepressant					
Cardiotonic					
Chemopreventive					
DME-Inhibitor IC50=57.5 uM	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 134.				
Emetic					
Estrogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Hemorrhagic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Hepatotoxic 0.8-1.71 mM/kg orl rat					
Hepatotoxic 2,500 ppm diet					
Hepatotoxic 100 mg/kg dog					
Hypnotic	Schultes, R.E. De Plantis Toxicariis e Mundo Novo Tropicale Commentationes XXXVI. Justicia (Acanthaceae) as a Source of an Hallucinogenic Snuff. Economic Botany 44(1): 61-70, 1990.				
Hypoglycemic 250-1,000 mg/kg orl	Economic & Medicinal Plant Research, 6: 165				
Immunostimulant					
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Larvostat	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Lymphocytogenic 100 mg/day	Gawron, A., Gorski*, G., Glowniak**, K. 1989. Increased proliferation of phytohaemagglutinin (PHA)-stimulated human leucocytes after 8-methoxypsoralen treatment. J. Pharm. Pharmacol. 42: 194-195, 1990.				
Lymphokinetic					
Narcotic					
Ovicide					
Pesticide					
Phagocytotic	Planta Medica, 56(6): 671, 1990.				
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Respirodepressant					
Rodenticide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Sedative	Schultes, R.E. De Plantis Toxicariis e Mundo Novo Tropicale Commentationes XXXVI. Justicia (Acanthaceae) as a Source of an Hallucinogenic Snuff. Economic Botany 44(1): 61-70, 1990.				
CUMINYL-ALCOHOL	Essential Oil	--	--		*
CYNAROSIDE	Plant	--	--		*
<b>Activities (3)</b>					
Aldose-Reductase-Inhibitor IC50=0.99 uM rat (strong activity)	Yoshikawa, M., et al. 1999. Medicinal Flowers. I. Aldose Reductase Inhibitors and Three New Eudesmane-Type Sesquiterpenes, Kikkanols A, B, and C, From the Flowers of Chrysanthemum indicum L. Chem Pharm Bull, 47(3): 340-345.				
Calcium-Antagonist IC50=1.2 uM rbt					
Hypocholesterolemic					
CYSTINE	Plant	1370.0	1980.0	-0.15	*
<b>Activities (2)</b>					
Adjuvant					Merck 11th Edition
Antihomocystinuric					Martindale's 29th
DELTA-3-CARENE	Plant	--	510.0	1.41	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities (8)					
Allergenic?					
Antibacterial		Revista Itiliana Eppos, 12: 5, 1994.			
Antiinflammatory ipr		Internat. J. Oriental Med. 15(4): 194, 1990+			
Dermatitigenic					
FLavor FEMA		Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Insectifuge		Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Irritant					
Pesticide					

DELTA-CADINENE	Essential Oil	--	--		*
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Activities (9)					
Aldose-Reductase-Inhibitor					
Antiacne					
Antibacterial MIC800 ug/ml		Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.			
Anticariogenic MIC800 ug/ml		Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.			
Antistreptococcic					
Cytochrome-P450-Inducer					
P450-Inducer					
Pesticide					
Testosterone-Inducer					

DIOSMETIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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Activities (13)					
Aldose-Reductase-Inhibitor IC17=10 uM		Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. Phytochemistry, 23: 1885-1888.			
Antialzheimeran					
Antidementia					
Antimutagenic ID50=10-40 nM		Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.			
Antirhinoviral		Economic & Medicinal Plant Research, 5: 197.			
Antiviral		Economic & Medicinal Plant Research, 5: 197.			
Cancer-Preventive		Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Estrogenic EC50=2.9 uM					
NO-Inhibitor EC50=19 uM					
Osteoblastogenic					
PPAR-Gamma-Antagonist					
TNF-alpha-Inhibitor IC50=3.27 uM					
TNF-alpha-Inhibitor EC50=39 uM					

EO	Leaf	1344.0	26000.0	1.27	*
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EO	Plant	4000.0	34000.0	1.84	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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ERIODICTYOL	Plant	--	--		*
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Activities (10)					
Antibacterial		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 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.			
Antiinflammatory					
Antioxidant					
Antiperoxidant		Planta Medica, 57: A110, 1991.			
Aphidifuge					
Cancer-Preventive		Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Expectorant		Lawrence Review of Natural Products, Mar-91.			
Juvabional		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Pesticide					

EUDES MOL	Essential Oil	--	--		*
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**Activities (76)**

Acaricide LD50=5.47 ug/sq cm cf DEET at 37.59 ug/sq cm	
Allergenic	
Analgesic	Merck 11th Edition
Anesthetic 200-400	Phytotherapy Research, 4: 93.
AntiTNF	
Antiaggregant IC50=0.3 uM	Phytotherapy Research, 4: 93.
Antiarachidonate	
Antibacterial 500 ppm	Valnet, J. 1982. The Practice of Aromatherapy. Translated from the 1980 French Edition by Robin Campbell and Libby Houston. Destiny Books, New York. 279 pp.
Antibacterial MBC=400 ug/ml	
Anticonvulsant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic 100	Phytotherapy Research, 4: 95.
Antiestrogenic	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antigenotoxic 50-500 mg/kg ori mus	
Antiherpetic IC50=16.2-25.6 ug/ml	
Antiinflammatory (11 uM) IC <sub>97</sub> =1,000 uM	
Antikeratotic IC50=16.2- 25.6 ug/ml	
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antinitrosating	
Antioxidant IC65=30 ppm	
Antioxidant 10 uM	
Antiprostaglandin 11 uM	
Antiprostaglandin IC50=9.2 mM	
Antipyretic 3 ml/man/day	
Antiradicular EC50=2 ul/l	
Antisalmonella MIC=400 ug/ml	
Antiseptic 3 ml/man/day	
Antiseptic 400 ug/ml	
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antistaphylococccic	Wright, C.W. (Ed) 2002. Medicinal & Aromatic Plants-Industrial Profiles. Artemisia. 344pp. Maffei, M. (Ed) 2002. Vetiveria. The Genus Vetiveria. Taylor & Francis. NY, NY. 191pp. Southwell, J., Lowe, R. (Eds) 1999. Tea Tree. The Genus Melaleuca. Harwood Acad. Pub. Amsterdam, Netherlands.
Antithromboxane	Lawrence Review of Natural Products, Jul-87.
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove ( <i>Eugenia caryophyllata</i> ) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.
Antiulcer	
Antiviral IC50=16.2-25.6 ug/ml	
Apifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
CNS-Depressant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
COX-1-Inhibitor IC97=1,000 uM	
COX-2-Inhibitor IC <sub>97</sub> =1,000 uM	
COX-2-Inhibitor IC50=129 uM	
Calcium-Antagonist IC50=224 uM	
Calcium-Antagonist IC50=200 uM gpg	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Phytotherapy Research, 4: 93.
Carcinogenic?	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Choleretic	
Cytochrome-P450-Inhibitor	Pizzorno, J. 1998. Total Wellness. Prima Health, a division of Prima.
Cytotoxic 25 ug/ml	Phytotherapy Research, 4: 93.
Dermatitigenic	
Enterorelaxant	J. Aromatherapy 4: 22.
FLavor FEMA 10-500	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

Fungicide	
Hepatoprotective 100 ppm	
Herbicide	
Insecticide	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Larvicide	
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=2,000 ug/ml	Shoyakugaku Zasshi, 44: 183.
Neurotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Prostaglandin-Synthesis-Inhibitor 1 mM rbt	Chen, S. J., Wang, M. H., Chen, I. J. 1996. Antiplatelet and Calcium Inhibitory Properties of Eugenol and Sodium Eugenol Acetate. Gen Pharmacol, 27(4): 629-633.
Prostaglandin-Synthesis-Inhibitor IC50=9.2 uM	
Sedative	
Termiticide LD100=5 mg/g	
Trichomonicide LD100=300 ug/ml	
Trichomonistat IC50=10 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Trypsin-Enhancer	Lawrence Review of Natural Products, Dec-93.
Ulcerogenic	Phytotherapy Research, 4: 93.
Varroacide	
Vasodilator	
Vermifuge	

FAT	Leaf	13440.0	80000.0	0.47	*
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FAT	Seed	370000.0	389000.0	0.65	*
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FAT	Plant	69480.0	80000.0	0.41	*
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FERULIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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#### Activities (61)

Allelopathic	Holappa, L.D., and Blum*. U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. J. of Chemical Ecology, 17(5): 865.
Analgesic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69.
Antiaggregant	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Antiallergic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiarrhythmic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidysmenorrheic	
Antiestrogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiherpetic	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antineoplastic (Stomach)	
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antioxidant 3,000 uM	



Antioxidant IC51=200 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 1/2 BHA	
Antioxidant EC50=9-15 ug/ml	
Antiradicular EC50=9-15 ug/ml	
Antiradicular IC50=116-124 uM	
Antiserotonin	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antithrombic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC46=10 uM	Cancer Research, 48: 5941.
Antiviral	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Arteriodilator	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cardiac	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Cholagogue	Pharmazie, 46: 156, 1991.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Hepatoprotective	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingstone, Edinburgh.
Hepatotropic	
Herbicide	Angewandte Botanik 68(5/6)=1994. Page 195.
Hydrocholeric	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypolipidemic	
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	
Phagocytotic	
Preservative	Merck 11th Edition
Prostaglandigenic	
Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM	Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. Yao Hsueh Hsueh Pao, 25(6): 412-416.
Sunscreen	Chemical Marketing Reporter; a weekly tabloid, 9/10/92.
Uterosedative 30-100 mg/kg ivn rat	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.

FIBER Plant 179294.0 693000.0 3.48 \*

**Activities (15)**

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

FIBER(CRUDE)	Leaf	--	202000.0	1.95	*
FIBER(DIETARY)	Leaf	--	363000.0	-0.14	*
FIXED-OIL	Seed	--	--		*
GALLIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.

**Activities (62)**

ACE-Inhibitor IC50=7.7 mM/l	
Analgic	
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-TERPINENE Plant 36.0 5460.0 1.69 \*

#### Activities (11)

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

GAMMA-TERPINENE Essential Oil 17800.0 49500.0 -0.15 \*

**Activities (11)**ACE-Inhibitor 100 ug/ml  
(weak activity)

Acaricide

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Antiacetylcholinesterase  
IC23=1.2 mM

Antifeedant Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.

Antioxidant Jim Duke's personal files.

FLavor FEMA 1-40 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

Insectifuge Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.

Irritant Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

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

Pesticide

GAMMA-TERPINEOL	Essential Oil	--	--	*
GAMMA-TERPINEOL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
GENKWANIN	Leaf	--	43.0	*

**Activities (3)**

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, Phytotherapy Research, 3(4), 1989, 117-125.

Pesticide

Purgative

GERANIOL	Essential Oil	--	--	*
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**Activities (35)**

Allergenic	
Anthelmintic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antibacterial MIC=400 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . J. Agric. Food Chem. 41: 1102-1105.
Antibacterial MIC=64 ug/ml	
Antibacterial MBC=800 ug/ml	
Anticancer (Pancreas) IC50=265 uM	
Anticariogenic MIC=400 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . J. Agric. Food Chem. 41: 1102-1105.
Antimelanomic IC50=150 uM/l	
Antisalmonella MIC=400 ug/ml	
Antiseptic 7 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antiseptic MIC=64 ug/ml	
Antiseptic 400-800 ug/ml	
Antispasmodic	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990.
Antitubercular MIC=64 ug/ml	
Antitumor	Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. J. Agric. Food Chem. 43: 2144-2147.
Antitumor (Pancreas) IC50=265 uM	
Ascaricide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
CNS-Stimulant	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Embryotoxic	
Emetic 3 x ipecac	Lawrence Review of Natural Products, Sep-97.
Expectorant	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
FLavor FEMA 1-10	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide IC93=2 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 IC100- 2,000 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 50 ppm	
Insectiphile	Merck 11th Edition
Mycobactericide MIC=64 ug/ml	
Nematicide IC86=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Nematicide MLC=1,000 ug/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Merck 11th Edition
Pesticide	
Sedative	
Trichomonicide LD100=300 ug/ml	

GERANIOL

Plant

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10660.0

1.38

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**Activities (35)**

Allergenic	
Anthelmintic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antibacterial MIC=400 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.
Antibacterial MIC=64 ug/ml	
Antibacterial MBC=800 ug/ml	
Anticancer (Pancreas) IC50=265 uM	
Anticariogenic MIC=400 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.
Antimelanomic IC50=150 uM/l	
Antisalmonella MIC=400 ug/ml	
Antiseptic 7 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antiseptic MIC=64 ug/ml	
Antiseptic 400-800 ug/ml	
Antispasmodic	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms (Flores Graminis, Graminis Flos) used in Aromatherapy. J. Ess. Oil Res., 2: 185-191, 1990.
Antitubercular MIC=64 ug/ml	
Antitumor	Yu, S.G., Anderson, P.J., and Elson, C.E. 1995. Efficacy of B-Ionone in the Chemoprevention of Rat Mammary Carcinogenesis. J. Agric. Food Chem. 43: 2144-2147.
Antitumor (Pancreas) IC50=265 uM	
Ascaricide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
CNS-Stimulant	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Embryotoxic	
Emetic 3 x ipecac	Lawrence Review of Natural Products, Sep-97.
Expectorant	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
FLavor FEMA 1-10	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide IC93=2 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 IC100-2,000 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 50 ppm	
Insectiphile	Merck 11th Edition
Mycobactericide MIC=64 ug/ml	
Nematicide IC86=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Nematicide MLC=1,000 ug/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Merck 11th Edition
Pesticide	
Sedative	
Trichomonicide LD100=300 ug/ml	

GERANYL-ACETATE                      Plant                      --                      3380.0                      3.51                      \*

**Activities (5)**

Allergenic	
FLavor FEMA 1-20	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Insectiphile	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.
Sedative	Jim Duke's personal files.

GERMACRONE                      Essential Oil                      --                      --                      \*

Activities (7)					
Analgesic					
Antiedemic					
Antiinflammatory					
Antistress					
Antitussive					
Antiulcer					
Hypothermic					

GLYCINE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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Activities (12)					
Antiacid	Martindale's 29th				
Antialdosteronic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antidote (Hypoglycin-A)	Martindale's 29th				
Antiencephalopathic	Martindale's 29th				
Antigastritic	Martindale's 29th				
Antiprostatic 125-250 mg 3 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antipruritic	Merck 11th Edition				
Antisickling	Ekeke, G.I. and Shode, F.O. 1988. Phenylalanine is the Predominant Antisickling Agent in Cajanus cajan Seed Extract. Planta Medica 56(1): 41, 1990.				
Antiulcer	Martindale's 29th				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Neuroinhibitor	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Uricosuric					

HEX-5-EN-1-OL	Essential Oil	--	--		*
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IRON	Leaf	25.0	147.0	-0.55	*
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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					

IRON	Plant	1075.0	1508.0	1.04	USDA's Ag Handbook 8 and sequelae)
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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					

ISOBORNEOL	Essential Oil	--	--		*
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Activities (7)					
Antihyperptic 600 ppm					
Antiviral 600 ppm					
Insectifuge					
Motor-Stimulant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC				
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.				
Pesticide					
Sedative					

ISOCHLOROGENIC-ACID	Shoot	--	--		*
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Activities (4)				
Antioxidant	Phenolic Compounds in Food and Their Effects on Health, 64.			
Antiseptic	J. Nat. Prod. 46(5).			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Pesticide				

ISOCHLOROGENIC-ACID	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
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Activities (4)				
Antioxidant	Phenolic Compounds in Food and Their Effects on Health, 64.			
Antiseptic	J. Nat. Prod. 46(5).			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Pesticide				

ISOEUGENOL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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Activities (16)				
Allergenic				
AntiTNF				
Antiaggregant IC50=0.72 uM	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.			
Antiinflammatory				
Antioxidant IC79=30 ppm				
Antitumor				
Bacteristat				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Candidistat				
Cytotoxic 25 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.			
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.			
Motor-Depressant	Buchbauer et al, e.g. Buchbauer et al. 1993. Therapeutic properties of essential oils and fragrances. Chap. 12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Motor-Stimulant	Buchbauer et al, e.g. Buchbauer et al. 1993. Therapeutic properties of essential oils and fragrances. Chap. 12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Pesticide				
Sedative	Buchbauer et al, e.g. Buchbauer et al. 1993. Therapeutic properties of essential oils and fragrances. Chap. 12 in Teranishi, R., Buttery, R.G and Sugisawa, H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC			
Trichomonistat IC50=10 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.			

ISOLEUCINE	Plant	4680.0	5054.0	-0.62	USDA's Ag Handbook 8 and sequelae)
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Activities (3)				
Antiencephalopathic?	Martindale's 29th			
Antipellagric	Martindale's 28th			
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			

ISOTHYMONIN	Plant	--	--		*
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Activities (4)				
Antiinflammatory IC~37=1,000 uM				
Antioxidant 10 uM				
COX-1-Inhibitor IC37=1,000 uM				
COX-2-Inhibitor IC>37=1,000 uM				

KAEMPFEROL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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Activities (75)				
11B-HSD-Inhibitor				
5-Lipoxygenase-Inhibitor IC50 (uM)=20				
Aldose-Reductase-Inhibitor 100 uM	Oliveira, T. T., Nagem, T. J., Miranda, L. C. G., Paula, V. F., Teixeira, M. A. 1997. Inhibitory Action on Aldose Reductase by Soybean Flavonoids. <i>J Braz Chem Soc</i> , 8(3): 211-213.			
Antiaflatoxin IC50=8.73 uM				
Antiaflatoxin IC50=3.28 ppm				
Antiaggregant 30 uM				
Antiallergic				



Antibacterial 20 ug/ml	
Anticancer	
Antifertility 250 mg/kg/day/60 days/orl rat	Kumar, P., Dixit*, V.P., and Khanna, P. Antifertility Studies of Kaempferol: Isolation and Identification from Tissue Culture of some Medicinally Important Plant Species. <i>Plantes medicinales et phytotherapie</i> , 23: 193-201, 1989.
Antigingivitic 20 ug/ml	
Antiherpetic 23-92 ug/ml	Amoros, M., Simoes, C.M.O., Girre, L., et al. Synergistic Effect Of Flavones And Flavonols Against Herpes Simplex Virus Type 1 In Cell Culture. Comparison With The Antiviral Activity Of Propolis. <i>J. of Natural Products</i> 55(12):1732-1740, 1992.
Antihistaminic	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.
Antiimplantation	
Antiinflammatory 20 mg/kg	
Antiinflammatory 200 mg/kg ipr rat	
Antileukemic IC50=3.1 ug/ml	Life Sciences 55: 1061.
Antilymphocytic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimutagenic ID50=10-40 nM	Phenolic Compounds in Food and Their Effects on Health. <i>Antioxidants &amp; Cancer Prevention</i> . Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antioxidant IC50=40 uM	
Antioxidant 3/4 quercetin	
Antioxidant IC50=1.2 ug/ml	
Antiperiodontic 20 ug/ml	
Antiplaque 20 ug/ml	
Antiradicular 7 x quercetin	
Antiseptic 20 ug/ml	
Antiserotonin 200 mg/kg ipr rat	
Antispasmodic	Williamson, E. M. and Evans, F. J., <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.
Antistaphylococccic	
Antitumor	
Antitumor-Promoter	Yasukawa, K., Takido, M., Takeuchi, M., Sato, Y., Nitta, K., and Nakagawa, S. 1989. Inhibitory Effects of Flavonol Glycosides on 12-O-Tetradecanoylphorbol-13-acetate-Induced Tumor Promotion. <i>Chem. Pharm. Bull.</i> 38(3): 774-776, 1990.
Antiulcer 50-200 mg/kg ipr rat	
Antiviral 23-92 ug/ml	
Apoptotic 60 uM	
Aromatase-Inhibitor IC12=1 uM/l	Journal of Medicinal Food 2: 235.1999.
COX-2-Inhibitor	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.
Choleretic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Copper-Chelator	
Cyclooxygenase-Inhibitor IC50 (uM) =20	
Cytotoxic	
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Diuretic	
Estrogenic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Estrogenic EC50=0.56 uM	
Fungicide 20 ug/ml	Father Nature's Farmacy: The aggregate of all these three-letter citations.
HIV-RT-Inhibitor IC50=50-150 ug/ml	Garcia, J., Morin,* C., Nyasse, B., Sondengam, B-L., Tchouankeu, J-C., and Tsamo, E. Complete Structural Assignments Of An Ergosterol Derivative From <i>Entandrophragma utile</i> . <i>Journal of Natural Products</i> , 54(1): 136-142, 1991.
Hepatoprotective IC50=5.46 uM	
Hepatoprotective IC50=1.30 ppm	
Hypotensive	
ICAM-1-Inhibitor	
Inotropic	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
JNK-Inhibitor	
Lipoxygenase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
MAO-Inhibitor	
Mutagenic	
NO-Inhibitor IC50=13.9 uM	

Natriuretic					
Neuroprotective					
PAF-Inhibitor					
Pesticide					
Protisticide	Meckes, M., Calzada, F., Tapia-Contreras, A., Cedillo-Rivera, R. 1999. Antiprotozoal Properties of Helianthemum glomeratum. Phytotherapy Research, 13(2): 102-105.				
Quinone-Reductase-Inducer 3 uM					
TNF-alpha-Inhibitor IC50=3.99 uM					
Teratologic					
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.				
Topoisomerase-II-Inhibitor IC50=8.1 ug/ml	Constantinou, A., Mehta, R., Runyan, C., Rao, K., Vaughan, A., Moon, R. 1995. Flavonoids as DNA Topoisomerase Antagonists and Poisons: Structure-Activity Relationships. J Natural Products, 58: 217-225.				
Tyrosinase-Inhibitor ID50=230 uM					
Uterotrophic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.				
Vasodilator					
cAMP-Phosphodiesterase-Inhibitor					
iNOS-Inhibitor IC50=<15 uM					
iNOS-Inhibitor IC50=13.9 uM					

KILOCALORIES	Leaf	--	2990.0	-0.05	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
L-BORNEOL	Plant	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
LABIATIC-ACID	Leaf	--	--		*

<b>Activities (1)</b>					
Antioxidant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				

LAURIC-ACID	Plant		2300.0	2484.0	-0.36	USDA's Ag Handbook 8 and sequelae)
<b>Activities (7)</b>						
Antibacterial						
Antioxidant IC71=60						
Antiviral						
COX-1-Inhibitor IC40=100						
COX-2-Inhibitor IC20=100						
Candidicide						
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)					

LEUCINE	Plant		4300.0	4644.0	-0.94	USDA's Ag Handbook 8 and sequelae)
<b>Activities (2)</b>						
Antiencephalopathic	Martindale's 29th					
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.					

LIMONENE	Plant		15.0	5200.0	2.71	*
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**Activities (60)**

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



**Activities (60)**

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

LINALOL	Plant	20.0	17420.0	3.51	*
LINALOOL	Plant	20.0	17420.0	1.69	*

### Activities (53)

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

LINALOOL	Essential Oil	28200.0	42800.0	-0.39	*
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**Activities (53)**

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

LINALYL-ACETATE                      Plant                      15.0                      4680.0                      1.67                      \*

**Activities (7)**Anesthetic 0.01-1  
ug/mlAntioxidant 400  
ppmAntispasmodic  
ED50=0.21  
mg/ml Fitoterapia No.59-1984.

FLavor FEMA 2-15 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

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

Perfumery Merck 11th Edition

Sedative

LINOLEIC-ACID

Seed

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ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

**Activities (27)**

5-Alpha-Reductase-Inhibitor

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

Antiacne

Antiallopecic

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

Antiandrogenic

Antiarteriosclerotic

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

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

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

Antifibrinolytic Economic &amp; Medicinal Plant Research, 1: 53.

Antigranular

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

Antiinflammatory IC50=31  
uMAntileukotriene-D4 IC50=31  
uM

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

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

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

Carcinogenic Science News, 146: 421.

Comedolytic

Hepatoprotective

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

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

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

Metastatic Science News, 146: 421.

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

Propecic

LINOLEIC-ACID

Plant

5000.0

5400.0

-0.5

USDA's Ag Handbook 8 and sequelae)



**Activities (27)****5-Alpha-Reductase-Inhibitor**

AntiMS	Economic & Medicinal Plant Research, 6: 189.
Antiacne	
Antialopecic	
Antianaphylactic	Economic & Medicinal Plant Research, 6: 189.
Antiandrogenic	
Antiarteriosclerotic	
Antiartritic	Economic & Medicinal Plant Research, 6: 189.
Anticoronary	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antieczemic	Economic & Medicinal Plant Research, 6: 189.
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antigranular	
Antihistaminic	Economic & Medicinal Plant Research, 6: 189.
Antiinflammatory IC50=31 uM	
Antileukotriene-D4 IC50=31 uM	
Antimenorrhagic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	Science News, 146: 421.
Comedolytic	
Hepatoprotective	
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Immunomodulator	Economic & Medicinal Plant Research, 6: 189.
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Metastatic	Science News, 146: 421.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Propecic	

LINOLENIC-ACID                      Seed                      --                      --                      ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

LITHIUM                                      Plant                      --                      4.0                      1.0                      List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

**Activities (11)**

AntiPMS	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.
Antihyperthyroid	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antimanic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antipsychotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antischizophrenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiviral	
Cholinergic	
Deliriant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Natriuretic	
Nephrotoxic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.

LITHOSPERMIC-ACID                      Shoot                      --                      --                      \*

**Activities (3)**

Antigonadotrophic	Jim Duke's personal files.
Antithyroid	Jim Duke's personal files.
Cardiotonic	

LUTEOLIN                                      Leaf                      --                      --                      \*

**Activities (78)**

Aldose-Reductase-Inhibitor EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.
Aldose-Reductase-Inhibitor IC50=0.45 uM rat	
AntiHIV	
Antiallergic	

Antiangiogenic IC60-75=10 uM	
Antiatherogenic	
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.
Anticarcinogenic	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Anticataract EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.
Anticomplementary	
Antidermatic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Antiestrogenic	
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antiherpetic 11-23 ug/ml	
Antihistaminic <10-15 uM	
Antiinflammatory #NAME?	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antileukemic 20-50 uM	
Antilymphomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimelanomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimutagenic ID50=2-5 nM	
Antimutagenic ID50=0.44 ug/ml	
Antinociceptive	
Antioxidant IC50=10 uM	
Antipolio	Economic & Medicinal Plant Research, 5: 197.
Antiproliferant	
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.
Antitumor 1-50 uM	
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Skin) 20 uM	
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Thyroid) 12-50 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitussive	
Antiviral 11-23 ug/ml	
Aphidifuge	
Apoptotic 12-50 uM	
Aromatase-Inhibitor IC35=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=40 uM	
Calcium-Antagonist IC50=1.2 uM fbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	

MAPK-Inhibitor  
MMP-9-Inhibitor 20 uM  
Metalloproteinase-Inhibitor  
Myorelaxant  
NEP-Inhibitor IC50=>42 uM  
NF-kB-Inhibitor  
NO-Inhibitor  
PTK-Inhibitor 10-100 uM  
Pesticide  
Proliferant  
Prostaglandin-Synthetase-Inhibitor  
Protein-Kinase-C-Inhibitor IC70=50 uM  
Succinoxidase-Inhibitor  
TNF-alpha-Inhibitor IC50=14.44 uM  
Topoisomerase-I-Inhibitor  
VEGF-Inhibitor IC50=2-7 uM  
Vasodilator  
Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml  
iNOS-Inhibitor

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

Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. *Toxicol Ind Health*, 14: 223-237.

Chem. & Pharm. Bull. 38: 1772.

LUTEOLIN Plant -- -- \*

**Activities (78)**

Aldose-Reductase-Inhibitor EC=3 ppm Shin\*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. *Fitoterapia* 64(2): 130, 1993.

Aldose-Reductase-Inhibitor IC50=0.45 uM rat

AntiHIV

Antiallergic

Antiangiogenic IC60-75=10 uM

Antiatherogenic

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

Anticarcinogenic

Anticarcinomic Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Anticataract EC=3 ppm Shin\*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. *Fitoterapia* 64(2): 130, 1993.

Anticomplementary

Antidermatic Bisset, N.G., ed. 1994. *Herbal Drugs and Phytopharmaceuticals.* CRC Press. Boca Raton, FL. 566 pp.

Antiestrogenic

Antifeedant IC52=<1,000 ppm diet Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, *Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology*, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Antiherpetic 11-23 ug/ml

Antihistaminic <10-15 uM

Antinflammatory #NAME? Wichtl, M. 1984. *Teedrogen. Ein Handbuch fur Apotheker und Arzte.* Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.

Antileukemic 20-50 uM

Antilymphomic Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antimelanomic Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antimutagenic ID50=2-5 nM

Antimutagenic ID50=0.44 ug/ml

Antinociceptive

Antioxidant IC50=10 uM

Antipolio Economic & Medicinal Plant Research, 5: 197.

Antiproliferant

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.

Antitumor 1-50 uM

Antitumor (Colon) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Kidney) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Lung) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Skin) 20 uM	
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Thyroid) 12-50 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitussive	
Antiviral 11-23 ug/ml	
Aphidifuge	
Apoptotic 12-50 uM	
Aromatase-Inhibitor IC35=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	
MAPK-Inhibitor	
MMP-9-Inhibitor 20 uM	
Metalloproteinase-Inhibitor	
Myorelaxant	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor	
PTK-Inhibitor 10-100 uM	
Pesticide	
Proliferant	
Prostaglandin-Synthetase-Inhibitor	
Protein-Kinase-C-Inhibitor IC70=50 uM	
Succinoxidase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
TNF-alpha-Inhibitor IC50=14.44 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml	Chem. & Pharm. Bull. 38: 1772.
iNOS-Inhibitor	

LUTEOLIN-7-DIGLUCOSIDE	Plant	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
LUTEOLIN-7-O-BETA-D-D1-GLUCOSIDE	Plant	--	--	*
LUTEOLIN-7-O-BETA-D-GLUCOSIDE	Plant	--	--	Stitt, Paul. Why George should eat broccoli.

**Activities (4)**

Antialkalotic	Martindale's 29th
Antiherpetic 0.5-3 g/day	
Essential	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypoarginanemic 250 mg/kg	Martindale's 29th

**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	
Antigastrotic	
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	

MAGNESIUM Leaf 733.0 4360.0 0.09 \*

#### 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	
Antigastrotic	
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	
Antiplaque 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	Leaf	1.0	6.4	-0.45	*
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**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	

MENTHONE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
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**Activities (30)**

Acaricide	
Allelopathic	
Analgesic	
Antiacetylcholinesterase IC50=1.4 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacillary MIC=1.25 mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
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	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonidic LD100=600 ug/ml	

METHIONINE Plant 1370.0 1980.0 -0.0 USDA's Ag Handbook 8 and sequelae)

**Activities (15)**

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

MONOTERPENES Plant -- 17340.0 \*



MYRCENE Plant 36.0 676.0 0.27 \*

**Activities (22)**

ACE-Inhibitor 100 ug/ml

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Allergenic

Analgesic Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.

Antibacterial

Anticonvulsant

Antimutagenic Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.

Antinitrosaminic

Antinociceptive 10-20 mg/kg ipr mus Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.

Antinociceptive 20-40 mg/kg scu mus Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.

Antioxidant Jim Duke's personal files.

Antispasmodic Jim Duke's personal files.

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

FLavor FEMA 0.5-9 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Hypothermic

Insectifuge

Irritant Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

Myorelaxant 100-200 mg/kg

P450-2B1-Inhibitor IC50=0.14 uM

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

Pesticide

MYRCENE Essential Oil -- 17500.0 -0.21 \*

**Activities (22)**

ACE-Inhibitor 100 ug/ml

Aldose-Reductase-Inhibitor 100 ug/ml Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.

Allergenic

Analgesic Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.

Antibacterial

Anticonvulsant

Antimutagenic Kauderer, B., Zamith, H., Paumgartten, F.J.R., and Speit, G. Evaluation of the Mutagenicity of B-Myrcene in Mammalian Cells In Vitro. Environmental and Molecular Mutagenesis 18: 28-34, 1991.

Antinitrosaminic

Antinociceptive 10-20 mg/kg ipr mus Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.

Antinociceptive 20-40 mg/kg scu mus Rao, V.S.N., Menezes, A.M.S., Viana, G.S.B. 1990. Effect of myrcene on nociception in mice. J. Pharm. Pharmacol. 42: 877-878, 1990.

Antioxidant Jim Duke's personal files.

Antispasmodic Jim Duke's personal files.

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

FLavor FEMA 0.5-9 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

Fungicide Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Hypothermic

Insectifuge

Irritant Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.

Myorelaxant 100-200 mg/kg

P450-2B1-Inhibitor IC50=0.14 uM

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

Pesticide

MYRCENOL-8 Plant 15.0 3900.0 \*

MYRCENOL-8-ACETATE Plant 15.0 2600.0 \*

**Activities (6)**

Antioxidant IC71=60	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.

N-TRIACONTANE	Plant	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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NARINGENIN	Plant	--	--	*
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**Activities (56)**

11B-HSD-Inhibitor	
Aldose-Reductase-Inhibitor IC25=1 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Aldose-Reductase-Inhibitor IC78=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry</i> , 23: 1885-1888.
Aldose-Reductase-Inhibitor 100 uM	Oliveira, T. T., Nagem, T. J., Miranda, L. C. G., Paula, V. F., Teixeira, M. A. 1997. Inhibitory Action on Aldose Reductase by Soybean Flavonoids. <i>J Braz Chem Soc</i> , 8(3): 211-213.
Aldose-Reductase-Inhibitor 1 ug/ml	Aida, K., Tawata, M., Shindo, H., Onaya, T., Sasaki, H., Yamaguchi, T., Chin, M.(Chen, Z.), and Mitsushashi, H. 1989. Isoliquiritigenin: A New Aldose Reductase Inhibitor from <i>Glycyrrhizae Radix</i> . <i>Planta Medica</i> 56(3): 254-258.
AntiHIV IC35=200 ug/ml	
Antiacetylcholinesterase	
Antiaflatoxin IC50=12 uM	
Antiaflatoxin IC50=3.37 ppm	
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antialzheimeran	
Antiamnesic	
Antiamyloid-Beta	
Antibacterial MIC=250-500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.
Anticancer	
Antiescherichic	
Antiestrogenic	
Antifibrotic	
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiherpetic	<i>Economic &amp; Medicinal Plant Research</i> , 5: 197.
Antiinflammatory 20 ppm	
Antileukemic IC50=>10 ug/ml	<i>Life Sciences</i> 55: 1061.
Antimutagenic ID50=50-100 nM	Maga, J.A. Contribution of Phenolic Compounds to Smoke Flavor. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.13.
Antioxidant 7 x quercetin	
Antiperistaltic	
Antiperoxidative	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiradicular 7 x quercetin	
Antisindhis IC50=15 ug/ml	
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antistaphylococcic	
Antitumor	
Antitumor-Promoter	
Antiulcer	<i>Fitoterapia</i> No.5-1990.
Antiviral IC50=15 ug/ml	
Aphidifuge	
Aromatase-Inhibitor IC45=1 uM/l	<i>Journal of Medicinal Food</i> 2: 235.1999.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Choleretic	
Cytochrome-P450-Inhibitor	Pizzorno, J. 1998. <i>Total Wellness</i> . Prima Health, a division of Prima.

Decarboxylase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Embryotoxic	
Estrogenic EC50=0.1-25 uM/l	
Fungicide 2.5 mM	
Fungistat	Weidenborner, M., Hindorf, H., Jha, H.C., and Tsotsonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus Aspergillus. Phytochemistry. 29(4): 1103-1105.
Hepatoprotective IC50=12 uM	
Hepatoprotective IC50=3.37 ppm	
Neuroprotective	
P450-Inhibitor	
Pesticide	
Serotonin-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
TNF-alpha-Inhibitor IC50=14.41 uM	
Teratogenic	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.
Uterotrophic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

NEROLIDOL	Plant	--	80.0	0.61	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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Activities (11)					
Aldose-Reductase-Inhibitor					
Allergenic					
Antiacne					
Antibacterial MIC=25-200 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 MIC=25-200 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.				
Antifeedant 1 mM (diet)	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.				
Antistreptococcic					
FLavor FEMA 1-10	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					

NIACIN	Plant	--	54.0	-0.32	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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**Activities (39)**

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

NIACIN	Leaf	9.0	54.0	-0.53	*
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**Activities (39)**

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

OCIMENE Essential Oil -- -- \*

**Activities (2)**

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

OLEANOLIC-ACID Plant -- 6300.0 0.67 List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

**Activities (64)**

Abortifacient	
AntiHIV IC50=21.8 ug/ml	
AntiHIV EC50=1.7 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
AntiPGE2 IC50=24 uM	
AntiTGF-beta IC50=19-24 uM	
Antiallergic	
Antiarrhythmic 40 mg/kg	
Antiatherosclerotic	
Antibacterial MIC=625-1,250 ug/ml	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Anticariogenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Anticomplement IC40-50 0.01 mM/l gpg	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.
Anticomplement IC80-90 0.05 mM/l gpg	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.
Antiedemic IC36=40 mg/kg ipr rat	
Antifertility	
Antigingivitic MIC=625- 1,250 ug/ml	
Antihepatotoxic	
Antihyperlipidemic	
Antiinflammatory 40 mg/kg ipr	Aquino, R., De Feo, V., De Simone, F., Pizza, C.*, and Cirino, G. Plant Metabolites. New Compounds And Anti-Inflammatory Activity Of Uncaria tomentosa. Journal of Natural Products, 54(2): 453-459, 1991.
Antiischemic 40 mg/kg	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antileukotriene IC50=17 uM	
Antimalarial IC50=70-89 ug/ml	
Antinephritic IC50=19-24 uM	
Antioxidant	Balaneheru, S. and Nagarajan, B. 1992. Intervention of Adriamycin Induced Free Radical Damage. Biochemistry International 28(4): 735-744, 1992.
Antioxidant IC46=10 uM	
Antiperiodontic MIC=625- 1,250 ug/ml	
Antiperoxidant IC30=200 ug/ml	
Antiplatelet MIC=625-1,250 ug/ml	
Antiplasmodial IC50=70- 89 ug/ml	
Antisarcotic	
Antiseptic MIC=625-1,250 ug/ml	
Antitumor	
Antitumor (Breast)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antiulcer >carbenoxolone	
Antiviral EC50=1.7 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61(9): 1090-1095.
Antiviral IC50=21.8 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61(9): 1090-1095.
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase- Inhibitor ~100 mg/kg	
COX-2-Inhibitor IC50=295 uM/	
COX-2-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. J. Nat. Prod., 61(10): 1212-1215.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective 40 mg/kg	
Cardiotonic	
Cyclooxygenase-Inhibitor	
Diuretic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Elastase-Inhibitor IC50=~15 uM	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 211.
Hypolipemic	
Hypotensive	
Immunomodulator	
Leucocytogenic	
NF-kB-Inhibitor	
Phagocytotic	
Piscicide	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Prostaglandin-Synthesis- Inhibitor igs mus	
Sedative	
Uterotonic	

Vasopressor					
OLEIC-ACID	Seed	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
<b>Activities (18)</b>					
5-Alpha-Reductase-Inhibitor					
Allergenic					
Alpha-Reductase-Inhibitor					
Anemiagenic					
Antiallopecic					
Antiandrogenic					
Antiinflammatory IC50=21 uM					
Antileukotriene-D4 IC50=21 uM					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Choleretic 5 ml/man					
Dermatitigenic					
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)				
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant					
Merck 11th Edition					
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugibayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Propecic					

OLEIC-ACID	Plant	4700.0	5076.0	0.11	USDA's Ag Handbook 8 and sequelae)
<b>Activities (18)</b>					
5-Alpha-Reductase-Inhibitor					
Allergenic					
Alpha-Reductase-Inhibitor					
Anemiagenic					
Antiallopecic					
Antiandrogenic					
Antiinflammatory IC50=21 uM					
Antileukotriene-D4 IC50=21 uM					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Choleretic 5 ml/man					
Dermatitigenic					
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)				
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Irritant					
Merck 11th Edition					
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugibayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Propecic					

P-COUMARIC-ACID	Leaf	--	420.0	-0.24	*
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**Activities (25)**

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. Sankyo Kenkyusho Nempo, 43: 99-110.
Allelopathic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibacterial	Pharmazie, 46: 156, 1991.
Anticlastogen	
Antifertility	
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antinitrosaminic	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antioxidant IC24=30 ppm	
Antioxidant 1/3 BHA	
Antiperoxidant IC50=>100 uM	Planta Medica, 57: A54, 1991.
Antiseptic	
Antispasmodic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antitumor	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Diaphoretic?	Lawrence Review of Natural Products, Dec-90.
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Lipoxygenase-Inhibitor IC11=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. J. Agric. Food Chem. 38: 688-690.
Pesticide	
Prostaglandigenic	
Prostaglandin-Synthesis-Inhibitor	
Tyrosinase-Inhibitor ID50=3,650 uM	

P-CYMEN-8-OL	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
P-CYMEN-8-OL	Essential Oil	--	--		*
P-CYMENE	Plant	146.0	20800.0	4.99	*

**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 reviewd book by Coats and draft by Henry
Fungicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Herbicide IC50=50 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Laxative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Trichomonicide LD100=50 ug/ml	

P-CYMENE	Essential Oil	78300.0	441300.0	3.01	*
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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	

P-HYDROXY-BENZOIC-ACID Plant -- -- Stitt, Paul. Why George should eat broccoli.

Activities (13)	
Antibacterial	
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antioxidant	Phenolic Compounds in Food and Their Effects on Health, 65.
Antiradicular	
Antisickling 10.5 ug/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Fungistat EC50=607 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Immunosuppressant	
Pesticide	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Prostaglandigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Secretagogue	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Ubiquit	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

P-HYDROXYBENZOIC-ACID-4-BETA-D-GLUCOSIDE Leaf -- -- Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

PALMITIC-ACID Plant 17200.0 18576.0 0.13 USDA's Ag Handbook 8 and sequelae)

Activities (13)	
5-Alpha-Reductase-Inhibitor	
Antiallopecic	
Antiandrogenic	
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antioxidant IC40=60	
FLavor FEMA 1	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Hemolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Pesticide	
Propepic	
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

PHENOLS Plant 800.0 27200.0 1.63 \*

PHENYLALANINE Plant 2410.0 2603.0 -1.11 USDA's Ag Handbook 8 and sequelae)

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

PHOSPHORUS	Plant	1703.0	2502.0	-0.52	USDA's Ag Handbook 8 and sequelae)
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Activities (4)					
Antiosteoporotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Anxiolytic					
Immunostimulant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Osteogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				

PHOSPHORUS	Leaf	160.0	950.0	-0.74	*
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Activities (4)					
Antiosteoporotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Anxiolytic					
Immunostimulant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Osteogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				

PHYTOSTEROLS	Plant	1520.0	1760.0	1.01	*
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Activities (2)					
Antiprostatotic					
Hypocholesterolemic					

PLANTEOSE	Seed	--	--		*
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POTASSIUM	Plant	7667.0	9302.0	-0.87	USDA's Ag Handbook 8 and sequelae)
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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					

POTASSIUM	Leaf	1626.0	9680.0	-0.91	*
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**Activities (14)**

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

PROTEIN	Plant	--	99000.0	-0.61	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
PROTEIN	Leaf	16632.0	99000.0	-1.13	*
PROTocatechuic-acid-4-beta-D-glucoside	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
RESIN	Plant	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
RIBOFLAVIN	Plant	4.0	53.0	2.9	*

**Activities (15)**

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

RIBOFLAVIN	Leaf	0.7	4.3	-0.16	*
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**Activities (15)**

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

ROSMARINIC-ACID	Plant	--	26000.0	-0.14	Fitoterapia No.62: 166.
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**Activities (57)**

ABeta-Inhibitor	
Adenylate-Cyclase-Inhibitor	
Aldose-Reductase-Inhibitor	
AntiHIV EC50=40 ug/ml	
Antiaaggregant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiallergic	
Antialzheimeran	
Antianaphylactic 1-100 mg/kg orl	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antianaphylactic ID50=1 mg/kg ivn rat	
Antianaphylactic ID50=10 mg/kg ims rat	
Antiatherosclerotic IC50=0.74 uM	
Antibacterial	Planta Medica, 55: 663.
Anticoagulant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplementary 1/2 aspirin	
Anticomplementary 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antidepressant	
Antiedemic 0.316-3.16 mg/kg ims	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antigonadotropic	
Antihemolytic IC70=5-10 um/l	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antihepatotoxic	
Antiherpetic 50 ug/ml	Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Antiherpetic EC50=20 ug/ml	
Antihyperthyroid	
Antiinflammatory IC~58=1,000 uM	
Antiintegrase 10 ug/ml	
Antileukotriene	
Antilipoperoxidant	
Antimutagenic	
Antinephritic	
Antioxidant EC50=2.7 ug/ml	Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.
Antioxidant 10 uM	
Antioxidant (LDL) IC50=0.74 uM	
Antiplateque	
Antiproliferant	
Antiprostaglandin 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiproteolytic IC50=0.9 mol l	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.
Antipulmonotic	Tyler, V.E.. 1994.
Antiradicular	
Antishock	Int. J. Immunopharmacology. Vol 10: 735, 1988.
Antithyreotropic	
Antithyroid	Jim Duke's personal files.
Antiuremic	
Antiviral EC50=40 ug/ml	
Anxiolytic	
Apoptotic	
COX-1-Inhibitor IC58=1,000 uM	
COX-2-Inhibitor IC>58=1,000 uM	
Calcium-Antagonist IC50=1.2 uM fbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cytotoxic TC50=100-150 ug/ml	
Deiodinase-Inhibitor	Jim Duke's personal files.
Immunomodulator	
Immunostimulant	
Lipoxygenase-Inhibitor	
Neuroprotective	
Pesticide	
Radioprotective	

**Activities (57)**

ABeta-Inhibitor	
Adenylate-Cyclase-Inhibitor	
Aldose-Reductase-Inhibitor	
AntiHIV EC50=40 ug/ml	
Antianggregant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiallergic	
Antialzheimeran	
Antianaphylactic 1-100 mg/kg orl	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antianaphylactic ID50=1 mg/kg ivn rat	
Antianaphylactic ID50=10 mg/kg ims rat	
Antiatherosclerotic IC50=0.74 uM	
Antibacterial	Planta Medica, 55: 663.
Anticoagulant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplementary 1/2 aspirin	
Anticomplementary 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antidepressant	
Antiedemic 0.316-3.16 mg/kg ims	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antigonadotropic	
Antihemolytic IC70=5-10 um/l	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antihepatotoxic	
Antiherpetic 50 ug/ml	Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Antiherpetic EC50=20 ug/ml	
Antihyperthyroid	
Antiinflammatory IC~58=1,000 uM	
Antiintegrase 10 ug/ml	
Antileukotriene	
Antilipoperoxidant	
Antimutagenic	
Antinephritic	
Antioxidant EC50=2.7 ug/ml	Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.
Antioxidant 10 uM	
Antioxidant (LDL) IC50=0.74 uM	
Antiplateau	
Antiproliferant	
Antiprostaglandin 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiproteolytic IC50=0.9 mol l	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.
Antipulmonotic	Tyler, V.E.. 1994.
Antiradicular	
Antishock	Int. J. Immunopharmacology. Vol 10: 735, 1988.
Antithyreotropic	
Antithyroid	Jim Duke's personal files.
Antiuremic	
Antiviral EC50=40 ug/ml	
Anxiolytic	
Apoptotic	
COX-1-Inhibitor IC58=1,000 uM	
COX-2-Inhibitor IC>58=1,000 uM	
Calcium-Antagonist IC50=1.2 uM fbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cytotoxic TC50=100-150 ug/ml	
Deiodinase-Inhibitor	Jim Duke's personal files.
Immunomodulator	
Immunostimulant	

Lipoxygenase-Inhibitor  
Neuroprotective  
Pesticide  
Radioprotective

ROSMARINIC-ACID                      Shoot                      5000.0                      13500.0                      -0.22                      \*

**Activities (57)**

ABeta-Inhibitor  
Adenylate-Cyclase-Inhibitor  
Aldose-Reductase-Inhibitor  
AntiHIV EC50=40 ug/ml  
Antiaaggregant                      Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  
Antiallergic  
Antialzheimeran  
Antianaphylactic 1-100 mg/kg orl                      Int. J. Immunopharmacology. Vol 10: 729, 1988.  
Antianaphylactic ID50=1 mg/kg ivn rat  
Antianaphylactic ID50=10 mg/kg ims rat  
Antiatherosclerotic IC50=0.74 uM  
Antibacterial                      Planta Medica, 55: 663.  
Anticoagulant                      Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.  
Anticomplementary 1/2 aspirin  
Anticomplementary 20 mg/kg ivn                      Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  
Antidepressant  
Antiedemic 0.316-3.16 mg/kg ims                      Int. J. Immunopharmacology. Vol 10: 729, 1988.  
Antigonadotropic  
Antihemolytic IC70=5-10 um/l                      Int. J. Immunopharmacology. Vol 10: 729, 1988.  
Antihepatotoxic  
Antiherpetic 50 ug/ml                      Vlietinck, A.J. and Domisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.  
Antiherpetic EC50=20 ug/ml  
Antihyperthyroid  
Antiinflammatory IC~58=1,000 uM  
Antiintegrase 10 ug/ml  
Antileukotriene  
Antilipoperoxidant  
Antimutagenic  
Antinephritic  
Antioxidant EC50=2.7 ug/ml                      Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.  
Antioxidant 10 uM  
Antioxidant (LDL) IC50=0.74 uM  
Antiplateque  
Antiproliferant  
Antiprostaglandin 20 mg/kg ivn                      Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.  
Antiproteolytic IC50=0.9 mol l                      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.  
Antipulmonotic                      Tyler, V.E.. 1994.  
Antiradicular  
Antishock                      Int. J. Immunopharmacology. Vol 10: 735, 1988.  
Antithyreotropic  
Antithyroid                      Jim Duke's personal files.  
Antiuremic  
Antiviral EC50=40 ug/ml  
Anxiolytic  
Apoptotic  
COX-1-Inhibitor IC58=1,000 uM  
COX-2-Inhibitor IC>58=1,000 uM  
Calcium-Antagonist IC50=1.2 uM rbt  
Cancer-Preventive                      Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.  
Cytotoxic TC50=100-150 ug/ml

Deiodinase-Inhibitor	Jim Duke's personal files.				
Immunomodulator					
Immunostimulant					
Lipoxygenase-Inhibitor					
Neuroprotective					
Pesticide					
Radioprotective					

SALICYLATES	Leaf	180.0	1830.0	3.41	J. Amer. Diet. Ass. 85{8}:950.
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Activities (7)					
Antiaggregant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antiinflammatory	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antipyretic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Antiruricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Hyperglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Hypoglycemic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Uricosuric	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				

SALICYLIC-ACID-2-BETA-D-GLUCOSIDE	Leaf	--	--		*
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SAPONINS	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
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Activities (5)					
Antihepatomic					
Antimutagenic					
Antitumor (Lung)					
Antitumor (Ovary)					
Immunomodulator					

SCLAREOL	Essential Oil	--	--		*
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Activities (5)					
Allelopathic	Kouzi, S.A., and McChesney*, J.D. Microbial Models Of Mammalian Metabolism: Fungal Metabolism Of The Diterpene Sclareol By Cunninghamella Species. Journal of Natural Products, 54(2): 483-490, 1991.				
Antibacterial	Kouzi, S.A., and McChesney*, J.D. Microbial Models Of Mammalian Metabolism: Fungal Metabolism Of The Diterpene Sclareol By Cunninghamella Species. Journal of Natural Products, 54(2): 483-490, 1991.				
Fungicide IC100=80 uM	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.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					

SELENIUM	Leaf	--	16.0	0.85	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
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Activities (60)					
AP-1-Inhibitor 2-50 uM					
Analgesic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Anorexic	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.				
AntiHIV					
AntiNF-kB					
Antiacne 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antiaggregant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiangiogenic 2 uM					
Antiangiogenic 230 ug/kg orl rat					
Antiarthritic					
Antiasthmatic					
Antiatherosclerotic					
Anticataract 400 ug/day					
Anticirrhotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Anticlimacteric 200 ug/day					
Anticoronary 200 ug/day					
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				

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

SILICON Leaf 3.4 20.2 -0.35 \*

**Activities (4)**

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

SODIUM Plant 430.0 1341.0 -0.23 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses



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

SODIUM	Leaf	250.0	1490.0	-0.38	*
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Activities (1)					
Hypertensive	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				

STIGMASTEROL	Leaf	80.0	85.0	0.08	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
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Activities (12)					
Antihepatotoxic					
Antiinflammatory	Lawrence Review of Natural Products, 1995				
Antinociceptive					
Antiophidic 2.3 mg ipr mus	Economic & Medicinal Plant Research, 5: 363.				
Antioxidant IC33=10 uM					
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in Artemisia annua. Plant Science, 75: 161-165, 1991.				
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, c., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. Phytochemistry. 29(5): 1667-1670. 1990.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Estrogenic					
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
Ovulant					
Sedative					

SYRINGIC-ACID-4-BETA-D-GLUCOSIDE	Leaf	--	--		*
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SYRINGOYL-GLUCOSE	Leaf	--	--		*
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TANNIN	Plant	80000.0	100000.0	0.24	*
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**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 IC50=1.44 ug/ml	
Antioxidant 1/3 quercetin	
Antiradicular 500 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 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- Inhibitor	
Glucosyl- Transférase-Inhibitor	
Hepatoprotective	
Immunosuppressant	
Lipoxygenase- Inhibitor	
MAO-Inhibitor	
Ornithine- Decarboxylase- 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- Inhibitor	

TANNIN                                      Leaf                                      16800.0    100000.0    -0.13                                      \*

**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 &amp; Medicinal Plant Research, 5: 363.

Antioxidant  
IC50=1.44 ug/mlAntioxidant 1/3  
quercetinAntiradicular 500  
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  
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-  
InhibitorGlucosyl-  
Transferase-Inhibitor

Hepatoprotective

Immunosuppressant

Lipoxygenase-  
Inhibitor

MAO-Inhibitor

Ornithine-  
Decarboxylase-  
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-  
Inhibitor

TERPINEN-4-OL

Essential Oil

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**Activities (23)**

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

THIAMIN	Plant	5.0	6.0	-0.14	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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**Activities (31)**

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

THIAMINE	Leaf	1.0	5.5	0.07	*
THREONINE	Plant	2520.0	2722.0	-1.03	USDA's Ag Handbook 8 and sequelae)

**Activities (4)**

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

THUJAN-4-OL	Plant	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
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THYMOL	Shoot	--	--	*	
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**Activities (71)**

Acaricide	
Allergenic	
Analgesic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ancylostomicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anesthetic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ankylostomacide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anthelmintic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antiacne	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Antiaggregant IC50=0.75	Tramil, 42: 511.
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antiarthritic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

Antiatherosclerotic IC50=4 uM	
Antibacterial MIC=50-400 ug/ml	
Antibronchitic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anticariogenic MIC=200-400 ug/ml	
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antihalitotic	American Health, 12(4): 17, 1993.
Antiherpetic	Martindale's 28th
Antiinflammatory (=indomethacin)	
Antileptic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antimelanomic IC50=120 uM/l	
Antineuritic	
Antioxidant 100 ppm	Martindale's 28th
Antioxidant (LDL) IC50=4 uM	
Antiperiodontic MIC=50-200 ug/ml	
Anti plaque MIC=39-625 ug/ml	Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21
Antiradicular EC=60	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.
Antirheumatic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antisalmonella	
Antiseptic 20 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic	
Antistaphylococcic	
Antistreptococcic MIC=200-400 ug/ml	
Antitrichinosis 5%	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antitussive	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Ataxigenic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Candidicide 100 ug/ml (>Nystatin)	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Counterirritant	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Culicide LC50=36-49 mg/l	
Cyclooxygenase- inhibitor (=indomethacin)	
Dentifrice	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Deodorant	Martindale's 28th
Dermatitigenic	
Enterorelaxant	J. Aromatherapy 4: 22.
Enterotoxic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Expectorant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
FLavor FEMA 2-100	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	Merck 11th Edition
Gastroirritant	Martindale's 29th
Gram(+)-icide MIC=200-400 ug/ml	
Gram(-)-icide MIC=50-200 ug/ml	
Insecticide LC50=36-49 mg/l	
Insecticide 0.22 uM/fly	
Insectifuge	
Irritant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Larvicide 10 ppm	Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279.
Larvicide 58 ppm	
Larvicide LC50=36-49 mg/l	
Molluscicide	
Myorelaxant	J. Aromatherapy 4: 22.
Nematicide MLC=0.1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Pesticide	

Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Sprout-Inhibitor	Duke, J.A.. Personal Communication.
Tracheorelaxant	
Trichomonicide LD100=25 ug/ml	
Urinary-Antiseptic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Varroacide	
Vermicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

THYMOL                                      Essential Oil                      231000.0    600500.0    1.25                      \*

#### Activities (71)

Acaricide	
Allergenic	
Analgesic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ancylostomicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anesthetic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ankylostomacide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anthelmintic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antiacne	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Antiaggregant IC50=0.75	Tramil, 42: 511.
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antiarthritic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antiatherosclerotic IC50=4 uM	
Antibacterial MIC=50-400 ug/ml	
Antibronchitic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anticariogenic MIC=200-400 ug/ml	
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antihalitotic	American Health, 12(4): 17, 1993.
Antiherpetic	Martindale's 28th
Antiinflammatory (=indomethacin)	
Antileptic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antimelanomic IC50=120 uM/l	
Antineuritic	
Antioxidant 100 ppm	Martindale's 28th
Antioxidant (LDL) IC50=4 uM	
Antiperiodontic MIC=50-200 ug/ml	
Antiplatelet MIC=39-625 ug/ml	Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21
Antiradicular EC=60	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.
Antirheumatic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antisalmonella	
Antiseptic 20 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic	
Antistaphylococcic	
Antistreptococcic MIC=200-400 ug/ml	
Antitrichinosic 5%	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antitussive	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Ataxigenic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Candidicide 100 ug/ml (>Nystatin)	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Counterirritant	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Culicide LC50=36-49 mg/l	
Cyclooxygenase-Inhibitor (=indomethacin)	

Dentifrice	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Deodorant	Martindale's 28th
Dermatitogenic	
Enterorelaxant	J. Aromatherapy 4: 22.
Enterotoxic	Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Expectorant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
FLavor FEMA 2-100	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	Merck 11th Edition
Gastroirritant	Martindale's 29th
Gram(+)icide MIC=200-400 ug/ml	
Gram(-)icide MIC=50-200 ug/ml	
Insecticide LC50=36-49 mg/l	
Insecticide 0.22 uM/fly	
Insectifuge	
Irritant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Larvicide 10 ppm	Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279.
Larvicide 58 ppm	
Larvicide LC50=36-49 mg/l	
Molluscicide	
Myorelaxant	J. Aromatherapy 4: 22.
Nematicide MLC=0.1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Sprout-Inhibitor	Duke, J.A.. Personal Communication.
Tracheorelaxant	
Trichomonicide LD100=25 ug/ml	
Urinary-Antiseptic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Varroacide	
Vermicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

THYMOL Plant 15.0 24100.0 2.4 \*

#### Activities (71)

Acaricide	
Allergenic	
Analgesic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ancylostomicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anesthetic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Ankylostomacide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Anthelmintic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antiacne	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Antiaggregant IC50=0.75	Tramil, 42: 511.
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antiarthritic	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
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Antibacterial MIC=50-400 ug/ml	
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Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Antihalitotic	American Health, 12(4): 17, 1993.
Antiherpetic	Martindale's 28th
Antiinflammatory (=indomethacin)	
Antilepric	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.



Antimelanomic IC50=120 uM/l	
Antineuritic	
Antioxidant 100 ppm	Martindale's 28th
Antioxidant (LDL) IC50=4 uM	
Antiperiodontic MIC=50-200 ug/ml	
Anti plaque MIC=39-625 ug/ml	Osawa, K., Matsumoto, T., Maruyama, T., Takiguchi, T., Okuda, K., and Takazoe, I., Studies of the antibacterial activity of plant extracts and their constituents against periodontopathic bacteria, Bull Tokyo Dent. Coll., 31 (1), 1990, 17-21
Antiradicular EC=60	Jimenez, J., Navarro, M.C., Montilla, M.P., Martin, A. and Martinez, A. 1993. Thymus zygis Oil: Its Effects on CCl4-Induced Hepatotoxicity and Free Radical Scavenger Activity. JEO5: 153-8.
Antirheumatic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antisalmonella	
Antiseptic 20 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic	
Antistaphylococcic	
Antistreptococcic MIC=200-400 ug/ml	
Antitrichinosis 5%	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.
Antitussive	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Ataxigenic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Candidicide 100 ug/ml (>Nystatin)	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Counterirritant	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Culicide LC50=36-49 mg/l	
Cyclooxygenase-Inhibitor (=indomethacin)	
Dentifrice	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Deodorant	Martindale's 28th
Dermatitigenic	
Enterorelaxant	J. Aromatherapy 4: 22.
Enterotoxic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Expectorant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Flavor FEMA 2-100	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	Merck 11th Edition
Gastroirritant	Martindale's 29th
Gram(+)-icide MIC=200-400 ug/ml	
Gram(-)-icide MIC=50-200 ug/ml	
Insecticide LC50=36-49 mg/l	
Insecticide 0.22 uM/fly	
Insectifuge	
Irritant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Larvicide 10 ppm	Berenbaum, M. R., The natives knew, Chemtech, (May), 1990, 275-279.
Larvicide 58 ppm	
Larvicide LC50=36-49 mg/l	
Molluscicide	
Myorelaxant	J. Aromatherapy 4: 22.
Nematicide MLC=0.1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Sprout-Inhibitor	Duke, J.A.. Personal Communication.
Tracheorelaxant	
Trichomonicide LD100=25 ug/ml	
Urinary-Antiseptic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Varroacide	
Vermicide	Madaus, G. 1976. Lehrbuch der Biologischen Hilfsmittel. Vol., 1-3. 2862 pp. (+ 144 p. index). Georg Olms Verlag, Hildesheim. Reprint of 1938 Madaus.

THYMOL-METHYL-ETHER

Plant

1.0

10000.0

2.23

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

THYMONIN	Plant	--	--		*
<b>Activities (3)</b>					
Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. <i>Biochem Pharmacol</i> , 31(23): 3807-3822.				
Antispasmodic	Fitoterapia No.2-1986.				
Myocontractant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
THYMONIN	Leaf	--	--		*
<b>Activities (3)</b>					
Aldose-Reductase-Inhibitor 10 uM	Okuda, I., Muwa, B., Inagakat, K., Horie, T., Nakayama, M. 1982. Inhibition of Aldose Reductases from Rat and Bovine Lenses by Flavonoids. <i>Biochem Pharmacol</i> , 31(23): 3807-3822.				
Antispasmodic	Fitoterapia No.2-1986.				
Myocontractant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
THYMUNIC-ACID	Plant	--	--		ANON. 1948-1976. <i>The Wealth of India raw materials.</i> Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
THYMUSAPONIN	Plant	--	--		ANON. 1948-1976. <i>The Wealth of India raw materials.</i> Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
THYMYL-ACETATE	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.
<b>Activities (6)</b>					
Antiseptic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
Carminative	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
Counterirritant	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	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
Pesticide					
Rubefacient	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
TIN	Leaf	3.0	17.0	0.17	*
<b>Activities (4)</b>					
Antiacne					
Antibacterial					
Pesticide					
Taenicide	Martindale's 28th				
TRANS-4-THUJANOL	Plant	--	--		*
TRYPTOPHAN	Plant	1860.0	2009.0	-0.94	USDA's Ag Handbook 8 and sequelae)

**Activities (29)**

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

TYROSINE Plant 2410.0 2603.0 -0.8 USDA's Ag Handbook 8 and sequelae)

**Activities (8)**

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

URSOLIC-ACID Plant 15000.0 18800.0 0.1 \*

**Activities (89)**

Analgesic	
AntiEBV	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
AntiHIV EC50=2.0 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
AntiHIV IC50=6.5 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
AntiHIV IC85=18 ug/ml	
AntiHIV 6.7 uM	
AntiTGF-beta IC50=6-7.5 uM	
Antialzheimeran	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. J. Nat. Prod., 61(10): 1212-1215.
Antiarrhythmic	
Antiarthritic	Planta Medica, 57: A56, 1991.
Antibacterial	
Anticancer	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. J. Nat. Prod., 61(10): 1212-1215.

Anticancer (Colon)	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticariogenic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticholestatic 28-100 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from <i>Eucalyptus Hybrid</i> . <i>Phytotherapy Research</i> 6: 74-79, 1992.
Anticomplement IC100 0.1 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antidiabetic	<i>Chemical Constituents of Oriental Herbs</i> (3 diff. books)
Antiedemic	
Antiescherichic	
Antifibrosarcomic IC80=10 uM	
Antihepatotoxic 5-20 mg/kg ipr	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from <i>Eucalyptus Hybrid</i> . <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antihistaminic	Tsuruga, T., Chun, Y.-T., Ebizuka, Y., and Sankawa, U. 1991. Biologically Active Constituents of <i>Melaleuca leucadendron</i> : Inhibitors of Induced Histamine Release from Rat Mast Cells. <i>Chem. Pharm. Bull.</i> 39(12): 3276-3278, 1991.
Antihyperlipidemic	
Antiinflammatory 1/3 indomethacin	
Antiinflammatory IC24=500 mg/kg	
Antileishmanic ED50=20 uM	
Antileukemic IC50=2.5-17.8 ug/ml	
Antilymphomic	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.
Antimalarial IC50=28-37 ug/ml	
Antimetastatic IC80=10 uM	
Antimutagenic IC57-80=80 mg/kg	
Antinephritic IC50=6-7.5 uM	
Antibesesity?	<i>Internat. J. Oriental Med.</i> 16: 4.
Antioxidant IC50=10 uM	
Antiperoxidant IC35=200 ug/ml	
Antiplasmodial IC50=28-37 ug/ml	
Antiproliferative IC50=15-20 uM	
Antistaphylococcic	
Antithromboxane IC50=50 uM	
Antitrypanosomic	
Antitumor	<i>Cancer Research</i> , 54: 701, 1994.
Antitumor (Breast) 0.5% diet	
Antitumor (Breast) IC50=15-20 uM	
Antitumor (Cervix)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Stomach) IC50=15-20 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor-Promoter	<i>Planta Medica</i> , 57: A56, 1991.
Antiulcer	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from <i>Eucalyptus Hybrid</i> . <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antiviral IC85=18 ug/ml	
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase-Inhibitor ~100 mg/kg	
CNS-Depressant	
COX-2-Inhibitor IC50=130 uM/	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Cardioprotective	
Cardiotonic	

Choleretic 5-20 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Cyclooxygenase-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from Plantago major, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Cytotoxic 50 ppm	
Cytotoxic ED50=3.75 ug/ml	
Cytotoxic 7.2 uM	
Diuretic	
Elastase-Inhibitor IC50=~15 uM	
Hepatoprotective 1-100 ug/ml	
Hepatoprotective 10 mg/kg	
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.
Hypotensive	
Immunomodulator	
Leucocytogenic	
Lipoxygenase-Inhibitor IC50=0.18 mM	
MMP-9-Inhibitor IC80=10 uM	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Piscicide	
Potassium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
Protease-Inhibitor IC85=18 ug/ml	
Protisticide	Chemical Express, 7: 285, 1992.
Quinone-Reductase-Inducer 5 ug/ml	Lee, S. K., Song, Y., Mata-Greenwood, E., Kelloff, G. J., Steele, V. E., Pezzuto, J. M. 1999. Modulation of in vitro Biomarkers of the Carcinogenic Process by Chemopreventive Agents. <i>Anticancer Res.</i> , 19: 35-44.
Sodium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
TOPO-2-Inhibitor	
Trypanocide	
Vasopressor	

VALINE Plant 5020.0 5422.0 -0.57 USDA's Ag Handbook 8 and sequelae)

**Activities (3)**

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

VANILLIC-ACID Plant -- -- Stitt, Paul. Why George should eat broccoli.

**Activities (24)**

Aldose-Reductase-Inhibitor 100 uM/l	
Allelopathic	
Anthelmintic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibacterial 1.5-15 mg/ml	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, Phytotherapy Research, 3(4), 1989, 117-125.
Anticancer	
Antifatigue	
Antiinflammatory	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antioxidant IC21=30 ppm	
Antioxidant 1/3 BHA	
Antiperoxidant IC15-65=100-200 ug/ml	
Antiradicular 7 x quercetin	
Antiseptic	
Antisickling	Planta Medica, 56(6): 681, 1990.
Antitumor	
Antitumor-Promoter	
Ascaricide	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic	
Fungicide	
Immunosuppressant	
Laxative	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
Pesticide	
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

VANILLIC-ACID-4-BETA-D-GLUCOSIDE	Leaf	--	--		*
WATER	Plant	74111.0	81690.0	-2.95	USDA's Ag Handbook 8 and sequelae)
WATER	Leaf	--	832000.0	0.12	*
ZINC	Plant	55.0	74.0	0.22	USDA's Ag Handbook 8 and sequelae)

**Activities (77)**

ACE-Inhibitor	
Analgesic	
AntiBPH 25-60 mg/day	
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
AntiHIV	
Antiacne 135 mg/day	
Antiacrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th
Antialcoholic	
Antialopepic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antialzheimeran 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiangiogenic	
Antianorexic	Martindale's 29th
Antiarthritic 50 mg/3x/day/orl/man	
Anticanker 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 30 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticoeliac	Martindale's 28th
Anticold 50 mg	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticolitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticoronary 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidementia	
Antidiabetic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Cadmium)	Let's Live, May 1989.
Antidyseuzic	
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.
Antisomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antileptic	Martindale's 29th
Antileukonychic	
Antilymphomic	
Antimaclitic	
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	
Antiperiodontic	
Antiplate	Martindale's 29th
Antiprolactin	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic 50 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiseptic 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antispare-Tire 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antistomatitic 50 mg/man/3x/day	Martindale's 28th
Antisyndrome-X 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitinnitic 60-120 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antitriglyceride 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiulcer 50 mg/3x/day/man	Martindale's 28th
Antiulcer 88 mg/rat/day/15 days	
Antiviral?	Martindale's 29th
Astringent	Martindale's 28th
Collagenic	
Copper-Antagonist	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Deodorant	Martindale's 29th
Detoxicant (Alcohol)	
Ergogenic	
Hypotensive 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Immunostimulant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunosuppressant 300 mg/day/6 wks/orl/man	Martindale's 29th
Insulinogenic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Leptingenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. J. Pharm. Pharmacol. 42: 657-659, 1990.
NF-kB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Testosteronigenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Trichomonidic	Martindale's 29th
Vulnerary	Martindale's 28th

ZINC Leaf 0.3 1.5 -0.52 \*

#### Activities (77)

ACE-Inhibitor	
Analgesic	
AntiBPH 25-60 mg/day	
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
AntiHIV	

Antiacne 135 mg/day	
Antiacrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th
Antialcoholic	
Antialopecic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antialzheimeran 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiangiogenic	
Antianorexic	Martindale's 29th
Antiarthritic 50 mg/3x/day/orl/man	
Anticanker 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticataract 30 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anticoeliac	Martindale's 28th
Anticold 50 mg	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticolitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
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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.
Antinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antileptic	Martindale's 29th
Antileukonychic	
Antilymphomic	
Antimaculitic	
Antimetastatic	
Antineuropathic	
Antinyctalopic	
Antibesity 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.
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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
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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	
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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
Leptinogenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. J. Pharm. Pharmacol. 42: 657-659, 1990.
NF-kB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Testosteronogenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Trichomonicide	Martindale's 29th
Vulnerary	Martindale's 28th