

# List of All Chemicals

## **P** Angelica archangelica (Apiaceae)

### Common name(s)

Angelica; Wild Parsnip; Garden Angelica

### How used

GRAS

\*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
(+)-ALPHA-COPAENE	Seed Essent. Oil	--	--		*
(+)-ALPHA-CURCUMENE	Root Essent. Oil	--	--		*
(+)-CUPARENE	Root	--	--		*
(+)-LIMONENE	Root	--	--		*
(+)-OXYPEUCEDANIN	Root	--	--		*
1,1-DIETHOXYHEXANE	Root	--	--		*
1,1-DIETHOXYHEXANE	Root Essent. Oil	--	--		*
1,1-DIETHOXYOCTANE	Root Essent. Oil	--	--		*
1,1-DIETHOXYOCTANE	Root	--	--		*
1,8-CINEOL	Fruit Essent. Oil	--	538000.0	1.0	*
1-O-BETA-D-GLUCOPYRANOSYL-(2S,3P)-3-HYDROXY-MARMESINE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
12-METHYL-13-TRIDECANOLIDE	Root	1.0	12.0		*
12-METHYL-OMEGA-TRIDECANOLIDE	Root Essent. Oil	--	--		*
12-METHYL-OMEGA-TRIDECANOLIDE	Root	--	--		*
13-TRIDECANOLIDE	Root	15.0	50.0		*
15-HYDROXPENTADECANOIC-ACID	Root	--	--		Wealth of India.
15-PENTADECANOLIDE	Root	15.0	75.0		*
17-HEPTADECANOLIDE	Root	2.0	20.0		*
2'-ANGELOYL-3'-ISOVALERYL-VAGINATE	Root	--	--		Phytochem. Anal. 3(1):42-48. 1992
<b>Activities (1)</b>					
Calcium-Antagonist					
2'-BETA-D-GLUCOPYRANOSYLOXY-MARMESINE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
2-DECANONE	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2-NITRO-1,5-P-MENTHADIENE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2-NONANONE	Root	--	1.0		*
<b>Activities (2)</b>					
Antiseptic					
Pesticide					
2-PENTYL-FURAN	Root	--	4.0	1.0	*

4,4,6-TRIMETHYLCYCLOHEX-2-EN-1-ONE	Root	--	--	*
4-ETHOXY-1-P-MENTHENE	Root	--	3.0	*
4-METHOXY-7-HYDROXYPSORALEN	Seed	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
4-METHOXY-7H-FURO(3,2-G)(1)BENZOPYRAN-7-ONE	Root	1.0	225.0	*
5,7-DIHYDROXY-2-METHYL-CHROMONE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
5-ISOPROPYLBICYCLO-(3,1.0)-HEXAN-2-ONE	Plant	10.0	30.0	*
5-METHOXY-GAMMA-HYDROXYPSORALEN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
5-METHOXY-PSORALEN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (10)</b>				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
Antipsoriac	Martindale's 29th			
Antitumor	Economic & Medicinal Plant Research, 6: 189.			
Antivitiilgic	Economic & Medicinal Plant Research, 6: 189.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Carcinogenic?	Martindale's 29th			
Fungicide				
Melaninogenic	Economic & Medicinal Plant Research, 6: 189.			
Melatoninogenic	Medline (post 1990 searches filed in my computer)			
Photodermatitigenic				
5-METHOXY-PSORALEN	Fruit	--	--	*
<b>Activities (10)</b>				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
Antipsoriac	Martindale's 29th			
Antitumor	Economic & Medicinal Plant Research, 6: 189.			
Antivitiilgic	Economic & Medicinal Plant Research, 6: 189.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Carcinogenic?	Martindale's 29th			
Fungicide				
Melaninogenic	Economic & Medicinal Plant Research, 6: 189.			
Melatoninogenic	Medline (post 1990 searches filed in my computer)			
Photodermatitigenic				
5-METHYL-ANGELICIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
5-UNDECEN-3-YNE	Root	2.0	15.0	*
7-ISOPROPYL-5-METHYL-BICYCLO(2.2.2)-OCT-5-EN-2-ONE	Root Essent. Oil	--	100.0	*
7-METHOXY-8-(3-METHYL-2-BUTENYL)-2H-1-BENZOPYRAN-2-ONE	Root	50.0	2000.0	*
8-(2-(3-METHYLBUTOXY)-3-HYDROXY-3-METHYLBUTOXY)PSORALEN	Root	--	--	Phytochem. Anal. 3(1):42-48. 1992
<b>Activities (1)</b>				
Calcium-Antagonist				
8-HYDROXY-5-METHOXY-PSORALEN	Seed	--	--	*
8-HYDROXY-5-METHOXY-PSORALEN	Plant	--	--	*
8-HYDROXY-5-METHOXY-PSORALEN	Fruit	--	62.0	*

**Activities (21)**

Antialopecic	Martindale's 28th
Antibacterial 6-100 ppm	
Antilymphomic 0.6 mg/kg orl	
Antimycotic 20-50 mg/man/day	Martindale's 28th
Antipsoriac 20-50 mg/man/day	Martindale's 28th
Antistaphylococcic 100 ppm	
Antitumor	Economic & Medicinal Plant Research, 6: 189.
Antiviral	
Antivitiilgic	Economic & Medicinal Plant Research, 6: 189.
Candidicide 100 ppm	
Carcinogenic	
Fungicide 100 ppm	
Fungicide IC50=300 uM	
Immunosuppressant	Economic & Medicinal Plant Research, 6: 189.
Lymphocytogenic	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.
Melaninogenic	Economic & Medicinal Plant Research, 6: 189.
Mitogenic 1 ug/mL	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.
Mutagenic	
Pesticide	
Photodermatitigenic	
Phototoxic	

**ACETALDEHYDE**

Seed

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

**Activities (6)**

Addictive 8 ug/kg	Science News, 145: 294.
Fungicide	
Perfumery FEMA 4-25	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Pesticide	
Respirapalytic	
Tyrosinase-Inhibitor ID50=43 ug/ml	

**ACONITIC-ACID**

Plant

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Pakistan Encyclopedia Planta Medica. 1986.

**Activities (1)**

Perfumery FEMA 1-30 ppm	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
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**ADENOSINE**

Root

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Pakistan Encyclopedia Planta Medica. 1986.

**Activities (28)**

Analgescic	
Antiaggregant	
Antiarrhythmic	Merck 11th Edition
Antidiuretic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Antidotoxic 500 mg/kg ipr mus	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.
Antihypertensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Antiinsomniac	
Antilipolytic	
Antispasmodic	
Antitachycardic 50-250 ug/kg/ivn	Martindale's 29th
Anxiolytic	
Arteriodilator	
Glucogonogenic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Hypocholesterolemic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Hypoglycemic	
Hypotensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Immunomodulator	
Insulinic	
Laxative	
Lipolytic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Myorelaxant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
PAF-Inhibitor IC50=90 nM	
PAF-Inhibitor 0.024 ug/ml	
Pyrogenic 0.09 mg/kg ivn hmn	Conradson, T. B. G., Dixon, C. M. S., Clarke, B., Barnes, P. J. 1987. Cardiovascular Effects of Infused Adenosine in Man: Potentiation by Dipyridamole. <i>Acta Physiol Scand</i> , 129(3): 387-391.
Respirastimulant	Martindale's 29th
Secretomotor	
Sedative	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Vasodilator	

ADENOSINE

Plant

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Pakistan Encyclopedia Planta Medica. 1986.

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Analgescic	
Antiaggregant	
Antiarrhythmic	Merck 11th Edition
Antidiuretic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Antidotoxic 500 mg/kg ipr mus	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.
Antihypertensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
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Antilipolytic	
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Arteriodilator	
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Hypotensive	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Immunomodulator	
Insulinic	
Laxative	
Lipolytic	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of <i>Allium sativum</i> L. and related species. Williams & Wilkins, Baltimore. 329 pp.
Myorelaxant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
PAF-Inhibitor IC50=90 nM	
PAF-Inhibitor 0.024 ug/ml	
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Respirastimulant	Martindale's 29th
Secretomotor	
Sedative	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Vasodilator	

ALANINE Leaf -- -- \*

**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-ALKYL-FUROCOUMARIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

ALPHA-AMYRIN Plant -- -- J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

**Activities (10)**

Analgescic
Antiedemic IC43=40 mg/kg ipr rat
Antiinflammatory IC71=1,000 ppm ori
Antinociceptive
Antitumor
Antiulcer
Cytotoxic 50-400
Gastroprotective
Hepatoprotective
Insectifuge

ALPHA-AMYRIN-ACETATE Fruit -- 26.0 \*

**Activities (2)**

Antiinflammatory
Antinociceptive

ALPHA-BISABOLOL Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

**Activities (20)**

Analgesic	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.
Antiarthritic	Lawrence Review of Natural Products, Mar-91.
Antibacterial	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Antiburn	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Antiinflammatory	
Antipeptic	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antipyretic	Lawrence Review of Natural Products, Mar-91.
Antiseptic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antispasmodic	
Antituberculic	
Antiulcer	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Candidicide	
Cicatrizant ED50=228 ug/g mus	
Cosmetic	Fitoterapia No.61: 254, 1990.
Fungicide	Iwu, M.M. 1993. Handbook of African Medicinal Plants. CRC Press, Boca Raton, FL 435 pp.
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Protisticide	
Vulnerary ED50=228 ug/g mus	

ALPHA-CARYOPHYLLENE	Root	--	--	*
ALPHA-COPAEN-11-OL	Root	15.0	45.0	*
ALPHA-COPAEN-8-OL	Root	--	--	*
ALPHA-COPAENE	Root	10.0	190.0	*
ALPHA-COPAENE	Root Essent. Oil	--	--	*
ALPHA-COPAENE-11-OL	Root Essent. Oil	--	--	*
ALPHA-COPAENE-8-OL	Root	6.0	18.0	*
ALPHA-CUBEBENE	Root	--	5.0	*
ALPHA-HUMULENE	Root Essent. Oil	--	--	*

**Activities (2)**

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

ALPHA-HUMULENE	Root	18.0	50.0	1.41	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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**Activities (2)**

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

ALPHA-METHYL-BUTYRIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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**Activities (2)**

FLavor FEMA 0.5-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

ALPHA-MUUROLENE	Root Essent. Oil	--	--	*
ALPHA-MUUROLENE	Root	10.0	120.0	*
ALPHA-PHELLANDRENE	Root	--	--	*

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      Seed Essent. Oil    --      --      \*

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      Leaf Essent. Oil    --      678000.0    1.75      \*

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      Root Essent. Oil    --      225000.0      \*

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.
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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.
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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                      Fruit                      --                      --                      \*

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-8-OL                      Root Essent. Oil                      --                      --                      \*

ALPHA-PHELLANDRENE-8-OL                      Root                      15.0                      40.0                      Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

ALPHA-PINENE                      Seed Essent. Oil                      --                      149000.0                      0.29                      \*



**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**

Root Essent. Oil -- -- \*

**Activities (28)**

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

ALPHA-PINENE

Root

35.0

5890.0

2.2

\*

**Activities (28)**

Allelochemic

Allergenic

Antiacne

Antibacterial

Antifeedant

Antiflu

Economic &amp; Medicinal Plant Research, 5: 195.

Antiinflammatory 500 mg/kg

Antipneumonic

Antiseptic

Antispasmodic

Antistaphylococcic

Antiviral

Economic &amp; 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 &amp; 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

Seed

170.0

1500.0

-0.34

\*

**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

Fruit

--

--

\*

**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                      Root                      --                      6.0                      -0.66                      \*

**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                      Root Essent. 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                      Fruit                      --                      --                      \*

**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                      Plant                      --                      --                      \*

**Activities (23)**

ACE-Inhibitor 100 ug/ml (weak activity)	
Aldose-Reductase-Inhibitor 100 ug/ml	Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.
Allelopathic	Wright, C.W. (Ed) 2002. Medicinal & Aromatic Plants-Industrial Profiles. Artemisia. 344pp. Maffei, M. (Ed) 2002. Vetiveria. The Genus Vetiveria. Taylor & Francis. NY, NY. 191pp. Southwell, I., Lowe, R. (Eds) 1999. Tea Tree. The Genus Melaleuca. Harwood Acad. Pub. Amsterdam, Netherlands.
Antiacne	
Antibacterial MIC=800-1,600 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticariogenic MIC=800-1,600 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.
Antiinflammatory	
Antiproliferant	
Antiseptic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cicatrizant ED50=240 ug/g mus	
FLavor FEMA 5-40	Aloe Research Council - Duke writeup of non-peer 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                      Root                      --                      12.0                      -0.56                      \*

**Activities (23)**

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

ALPHA-TERPINOLENE	Root	--	--	*
ALPHA-THUJENE	Root	1.0	13.0	*
ALPHA-THUJENE	Root Essent. Oil	--	--	*
ANGALCIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
ANGELIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.

**Activities (1)**
**Sedative**

ANGELICAIN	Plant	--	--	*
ANGELICAIN	Root	--	--	*
ANGELICIN	Root Essent. Oil	--	35000.0	*

Activities (17)					
Antiaflatoxin IC50=1.83 uM					
Antiaflatoxin 0.34 ppm					
Anticonvulsant					
Antiflu	Economic & Medicinal Plant Research, 5: 195.				
Antimutagenic IC50=1.83 uM					
Antimutagenic 0.34 ppm					
Antispasmodic ED=20					
Antiviral					
CNS-Depressant ED=20-80					
Cytotoxic					
Hepatoprotective IC50=1.83 uM					
Hepatoprotective 0.34 ppm					
Hypotensive ED=20-50 iv					
Myorelaxant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Photoactive	Economic & Medicinal Plant Research, 5: 199.				
Phototoxic					
Sedative ED=20-80					

ANGELICIN Seed -- -- \*

Activities (17)					
Antiaflatoxin IC50=1.83 uM					
Antiaflatoxin 0.34 ppm					
Anticonvulsant					
Antiflu	Economic & Medicinal Plant Research, 5: 195.				
Antimutagenic IC50=1.83 uM					
Antimutagenic 0.34 ppm					
Antispasmodic ED=20					
Antiviral					
CNS-Depressant ED=20-80					
Cytotoxic					
Hepatoprotective IC50=1.83 uM					
Hepatoprotective 0.34 ppm					
Hypotensive ED=20-50 iv					
Myorelaxant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Photoactive	Economic & Medicinal Plant Research, 5: 199.				
Phototoxic					
Sedative ED=20-80					

ANGELICIN Root -- -- \*

Activities (17)					
Antiaflatoxin IC50=1.83 uM					
Antiaflatoxin 0.34 ppm					
Anticonvulsant					
Antiflu	Economic & Medicinal Plant Research, 5: 195.				
Antimutagenic IC50=1.83 uM					
Antimutagenic 0.34 ppm					
Antispasmodic ED=20					
Antiviral					
CNS-Depressant ED=20-80					
Cytotoxic					
Hepatoprotective IC50=1.83 uM					
Hepatoprotective 0.34 ppm					
Hypotensive ED=20-50 iv					
Myorelaxant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Photoactive	Economic & Medicinal Plant Research, 5: 199.				
Phototoxic					
Sedative ED=20-80					

APTERIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

APTERIN Root -- -- \*

AR-CURCUMENE Root -- 6.0 -1.0 \*

<b>Activities (3)</b>				
Antirhinoviral IC50=1,750?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.			
Antiulcer IC45=100 mg/kg	Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... <i>Yakugaku Zasshi</i> 112: 645-655 (1992).			
Antiviral IC50=1,750?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.			
ARACHIDIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
ARACHIDIC-ACID	Fruit	--	--	*
ARCHANGELENONE	Root	--	50.0	*
ARCHANGELENONE	Plant	--	--	*
ARCHANGELICAIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
ARCHANGELICIN	Plant	--	--	*
<b>Activities (2)</b>				
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Calcium-Antagonist IC50=1.2 ug/ml (> verapamil)				
ARCHANGELICIN	Shoot	--	--	*
<b>Activities (2)</b>				
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Calcium-Antagonist IC50=1.2 ug/ml (> verapamil)				
ARCHANGELICIN	Fruit	--	--	*
<b>Activities (2)</b>				
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Calcium-Antagonist IC50=1.2 ug/ml (> verapamil)				
ARCHANGELICIN	Root	--	--	*
<b>Activities (2)</b>				
Antispasmodic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Calcium-Antagonist IC50=1.2 ug/ml (> verapamil)				
ARCHANGELIN	Root	--	2000.0	*
ASPARAGINE	Leaf	--	--	*
<b>Activities (2)</b>				
Antisickling	Ekeke, G.I. and Shode, F.O. 1988. Phenylalanine is the Predominant Antisickling Agent in <i>Cajanus cajan</i> Seed Extract. <i>Planta Medica</i> 56(1): 41, 1990.			
Diuretic	HerbalGram No. 17.			
ASPARTIC-ACID	Leaf	--	--	*
<b>Activities (3)</b>				
Antimorphinic	Martindale's 28th			
Neuroexcitant	Martindale's 28th			
Roborant	Merck 11th Edition			
AZULENOGENIC-HYDROCARBON	Seed	930.0	5890.0	Wealth of India.
BEHENIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (1)</b>				
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
BERGAPTEN	Root	--	--	*



**Activities (26)**

Antiaggregant	
Antiapertif	
Anticonvulsant	
Antihistaminic 25 mg/kg ipr mus	
Antiinflammatory	
Antijet-lag	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Antileukodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Antiplatelet	
Antipsoriac	
Antispasmodic	
Antitumor	
CNS-Depressant	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Calcium-Antagonist	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Carcinogenic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
DME-Inhibitor IC50=96 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.
Hypotensive	
Insecticide	
Lipolytic	
Molluscicide	
Mutagenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Phototoxic	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

BERGAPTEN                      Seed                      2.0                      6800.0                      1.55                      \*

**Activities (26)**

Antiaggregant	
Antiapertif	
Anticonvulsant	
Antihistaminic 25 mg/kg ipr mus	
Antiinflammatory	
Antijet-lag	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Antileukodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antiplatelet	
Antipsoriac	
Antispasmodic	
Antitumor	
CNS-Depressant	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Calcium-Antagonist	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Carcinogenic	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.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DME-Inhibitor IC50=96 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.
Hypotensive	
Insecticide	
Lipolytic	
Molluscicide	
Mutagenic	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	
Phototoxic	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

BERGAPTEN

Shoot

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**Activities (26)**

Antiaggregant	
Antiapertif	
Anticonvulsant	
Antihistaminic 25 mg/kg ipr mus	
Antiinflammatory	
Antijet-lag	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Antileukodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antiplatelet	
Antipsoriac	
Antispasmodic	
Antitumor	
CNS-Depressant	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Calcium-Antagonist	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Carcinogenic	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.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DME-Inhibitor IC50=96 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.
Hypotensive	
Insecticide	
Lipolytic	
Molluscicide	
Mutagenic	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	
Phototoxic	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

BERGAPTEN

Root Essent. Oil --

88000.0

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**Activities (26)**

Antiaggregant	
Antiapertif	
Anticonvulsant	
Antihistaminic 25 mg/kg ipr mus	
Antiinflammatory	
Antijet-lag	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Antileukodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antiplatelet	
Antipsoriac	
Antispasmodic	
Antitumor	
CNS-Depressant	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Calcium-Antagonist	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Carcinogenic	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.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DME-Inhibitor IC50=96 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.
Hypotensive	
Insecticide	
Lipolytic	
Molluscicide	
Mutagenic	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	
Phototoxic	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

BERGAPTEN

Plant

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**Activities (26)**

Antiaggregant

Antiapertif

Anticonvulsant

Antihistaminic 25 mg/kg  
ipr mus

Antiinflammatory

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

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

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Antiplatelet

Antipsoriac

Antispasmodic

Antitumor

CNS-Depressant Neuwinger, H. D. 1996. *African Ethnobotany - Poisons and Drugs*. Chapman & Hall, New York. 941 pp.

Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. *Planta Medica* 1987: 526.

Carcinogenic

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

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

DME-Inhibitor IC50=96 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.

Hypotensive

Insecticide

Lipolytic

Molluscicide

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

Pesticide

Phototoxic

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

BERGAPTEN	Fruit	48.0	1300.0	*
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**Activities (26)**

Antiaggregant	
Antiapertif	
Anticonvulsant	
Antihistaminic 25 mg/kg ipr mus	
Antiinflammatory	
Antijet-lag	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Antileukodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antiplatelet	
Antipsoriac	
Antispasmodic	
Antitumor	
CNS-Depressant	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Calcium-Antagonist	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Carcinogenic	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.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DME-Inhibitor IC50=96 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.
Hypotensive	
Insecticide	
Lipolytic	
Molluscicide	
Mutagenic	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	
Phototoxic	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

Activities (4)					
Anticonvulsant					
Antiinflammatory					
Antinociceptive					
Antioxidant					

BETA-BISABOLENE Root Essent. Oil -- -- \*

Activities (6)					
Abortifacient					
Antirhinoviral IC50=1,800?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.				
Antiulcer IC57=100 mg/kg	Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... <i>Yakugaku Zasshi</i> 112: 645-655 (1992).				
Antiviral IC50=1,800?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Stomachic					

BETA-BISABOLENE Root 8.0 72.0 -1.2 \*

Activities (6)					
Abortifacient					
Antirhinoviral IC50=1,800?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.				
Antiulcer IC57=100 mg/kg	Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... <i>Yakugaku Zasshi</i> 112: 645-655 (1992).				
Antiviral IC50=1,800?	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). <i>Journal of Natural Products</i> , 57(5): 658-662, 1994.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Stomachic					

BETA-CARYOPHYLLENE Root Essent. Oil -- 110000.0 1.04 \*

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

BETA-CEDRENE Root -- -- \*

BETA-COPAENE Root Essent. Oil -- -- \*

BETA-COPAENE Root 8.0 20.0 Lawrence, B.M., *Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980*.

BETA-CYMOL Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

BETA-ELEMENE Root -- 90.0 -1.0 \*

Activities (5)					
Anticancer (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.				
Antigliomic					
Antiproliferant					
Antitumor (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.				
Apoptotic					

BETA-ELEMENE Root Essent. Oil -- -- \*

Activities (5)					
Anticancer (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.				
Antigliomic					
Antiproliferant					
Antitumor (Cervix)	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.				
Apoptotic					

BETA-EUDES MOL Root 1.0 21.0 1.0 \*

Activities (13)					
AntiEBV					
Antianoxic ED60=300 orl mus	Yamahara, J., Matsuda, H., Naitoh, Y., Fujimura, H., and Tamai, Y. 1990. Antianoxic Action and Active Constituents of Atractylodis Lanceae Rhizoma. Chem. Pharm. Bull. 38(7): 2033-2034, 1990.				
Antimutagenic ID50=0.09 uM/ml					
Antipeptic	Chem & Pharm. Bull., 34: 3854, 1986.				
Antisalmonella >0.18 uM/ml					
Antitumor-Promoter?					
Antiulcer					
CNS-Inhibitor					
Calcium-Antagonist 40 uM mus					
Hepatoprotective					
Neurogenic					
Pesticide					
Sedative					
BETA-EUDES MOL	Root Essent. Oil	--	--		*

Activities (13)					
AntiEBV					
Antianoxic ED60=300 orl mus	Yamahara, J., Matsuda, H., Naitoh, Y., Fujimura, H., and Tamai, Y. 1990. Antianoxic Action and Active Constituents of Atractylodis Lanceae Rhizoma. Chem. Pharm. Bull. 38(7): 2033-2034, 1990.				
Antimutagenic ID50=0.09 uM/ml					
Antipeptic	Chem & Pharm. Bull., 34: 3854, 1986.				
Antisalmonella >0.18 uM/ml					
Antitumor-Promoter?					
Antiulcer					
CNS-Inhibitor					
Calcium-Antagonist 40 uM mus					
Hepatoprotective					
Neurogenic					
Pesticide					
Sedative					
BETA-FARNESENE	Root	5.0	15.0	-0.58	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
BETA-FARNESENE	Root Essent. Oil	--	--		*
BETA-HIMACHALENE	Root	--	12.0		*
BETA-MYRCENE	Root	--	--		*

Activities (2)					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Perfumery	Merck 11th Edition				
BETA-PHELLANDRENE	Root Essent. Oil	--	--		*

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	Root	50.0	5320.0	1.0	*

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	Fruit	--	--		*

Activities (3)	
Expectorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Fungicide	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.
Perfumery	Merck 11th Edition

BETA-PINENE                      Root                      2.0                      2400.0                      2.07                      \*

Activities (13)	
Allergenic	
Antiinflammatory	
Antiseptic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> 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. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , 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.
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. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
Transdermal	

BETA-PINENE                      Fruit                      --                      --                      \*

Activities (13)	
Allergenic	
Antiinflammatory	
Antiseptic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> 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. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , 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.
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. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
Transdermal	

BETA-PINENE                      Seed Essent. Oil    --                      --                      \*

Activities (13)	
Allergenic	
Antiinflammatory	
Antiseptic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients 2nd Ed.</i> 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. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , 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.
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. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
Transdermal	

BETA-PINENE                      Root Essent. Oil    --                      --                      \*



**Activities (13)**

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

BETA-SELINENE                      Root                      --                      --                      \*

**Activities (3)**

Antimalarial IC50=>50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Antiplasmodial IC50=>50 ug/ml	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

BETA-SESQUIPELLANDRENE                      Root                      --                      7.0                      -1.0                      \*

**Activities (5)**

Antirhinoviral IC50=0.44 uM	Denyer, C.V., Jackson, P., Loakes, D.M., Ellis, M.R., and Yound, D.A.B. Isolation of Antirhinoviral Sesquiterpenes From Ginger ( <i>Zingiber officinale</i> ). Journal of Natural Products, 57(5): 658-662, 1994.
Antiulcer IC40=50 mg/kg	Yamahara, J., et al. Stomachic principles in ginger. II. Pungent and anti-ulcer effects of low polar constituents isolated from ginger, the dried rhizoma of... Yakugaku Zasshi 112: 645-655 (1992).
Expectorant	
Pesticide	
Stomachic	

BETA-SITOSTEROL                      Fruit                      --                      --                      \*

**Activities (47)**

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

BETA-SITOSTEROL                      Seed                      1.5                      9.5                      -0.63                      \*

**Activities (47)**

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

BETA-SITOSTEROL

Plant

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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. <i>Journal of Ethnopharmacology</i> , 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 <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Anticancer (Cervix)	
Anticancer (Lung)	
Antiedemic IC54=320 mg/kg orl	
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
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Antimutagenic 250 ug/ml	
Antiophidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC44=10 uM	
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Antiprostaglandin 30 mg/day/12 wks	
Antiprostataadenomic	Merck 11th Edition
Antiprostatic 10-20 mg 3 x/day/orl man	
Antipyretic	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs.</i> Chapman & Hall, New York. 941 pp.
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Antitumor (Cervix)	
Antitumor (Lung)	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
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Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, c., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
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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. <i>African Ethnobotany - Poisons and Drugs.</i> Chapman & Hall, New York. 941 pp.
Gonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Hepatoprotective	
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypolipidemic 2-6 g/day	
Pesticide	
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Ulcerogenic 500 mg/kg ipr rat	

BETA-SITOSTEROL-PALMITATE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
BETA-SITOSTERYL-ARACHINATE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
BETA-THUJENE	Seed Essent. Oil	--	870000.0	*
BETA-THUJENE	Root	6900.0	8700.0	*
BICYCLOGERMACRENE	Root	--	--	*
BISABOLANGELONE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.

**Activities (2)**

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

BISABOLENE Root Essent. Oil -- -- \*

BISABOLOL Root Essent. Oil -- -- \*

BORNEOL Root Essent. Oil -- -- \*

**Activities (35)**

(-)-Chronotropic 29 ug/ml Hansel, R., Keller, K., Rimpler, H., and Schneider, G, eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

(-)-Inotropic 29 ug/ml Hansel, R., Keller, K., Rimpler, H., and Schneider, G, eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Allelochemic

Analgesic

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

Antibacterial 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 reviewd book by Coats and draft by Henry

Fungicide

Hepatoprotective

Herbicide IC50=470 mM Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Herbicide IC50=470 uM Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

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

Insect-Repellent

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

Irritant Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.

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

Nematicide MLC=1 mg/ml Shoyakugaku Zasshi, 44: 183.

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

Pesticide

Sedative Medline (post 1990 searches filed in my computer)

Tranquilizer

BORNEOL Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.



**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	Root	--	--		*
BORNEOL-ACETATE	Root Essent. Oil	--	--		*
BORNEOL-ISOVALERATE	Root Essent. Oil	--	--		*
BORNYL-ACETATE	Root	25.0	75.0	-0.57	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities (12)	
(-)-Chronotropic 933 nl/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
(-)-Inotropic 933 nl/ml	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antibacterial	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antispasmodic 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	

BORNYL-ISOVALERATE	Root	--	7.0	-1.0	*
BYAKANGELICIN	Root	--	13.0		*

Activities (5)	
Antiestrogenic	
Antigonadotropic	=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
Antihistaminic 25 mg/kg ipr mus	
Antilipogenic	
Calcium-Antagonist	

BYAKANGELICIN-2'-O-ISOVALERATE	Root	--	2.0		*
--------------------------------	------	----	-----	--	---

BYAKANGELICIN-ANGELATE	Root	--	8.0		*
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Activities (1)	
Calcium-Antagonist	

BYAKANGELICOL	Root	--	--		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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CAFFEIC-ACID	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
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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.
Antiphidic	
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 <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 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. <i>J. Agric. Food Chem.</i> 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. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , 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 Livingston, Edinburgh.

CAMPESELOL	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
CAMPESENIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
CAMPESIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
CAMPHENE	Fruit	--	--	*

<b>Activities (9)</b>				
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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Antioxidant	Jim Duke's personal files.			
Expectorant	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.			
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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Pesticide				
Spasmogenic	Fitoterapia No.59-1984.			

CAMPHENE	Root Essent. Oil	--	--	*
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<b>Activities (9)</b>				
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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Antioxidant	Jim Duke's personal files.			
Expectorant	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.			
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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.			
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Pesticide				
Spasmogenic	Fitoterapia No.59-1984.			

CAMPHENE	Root	2.0	130.0	1.41	*
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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 Pesticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Spasmogenic	Fitoterapia No.59-1984.				

CAR-3-ENE	Root	--	--		*
CAR-3-ENE	Root Essent. Oil	--	--		*
CARVONE	Root	--	2.0	-0.77	*

Activities (19)					
Allergenic					
Antiacetylcholinesterase 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 reviewed 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	Root Essent. Oil	--	--		*
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**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	
Antionychotic	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Antiproliferant	
Antispasmodic	
Antistaphylococcic	
Antistreptococcic	
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (Eugenia caryophyllata) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.
Antiulcer	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Candidicide	
FLavor FEMA 20-200	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Gastroprotective	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Insectifuge	
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Larvicide	
Mosquitocide	
Perfumery	Merck 11th Edition
Pesticide	
Sedative	
Termitifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

CARYOPHYLLENE	Root	8.0	20.0	-0.68	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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**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	
Antionychotic	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Antiproliferant	
Antispasmodic	
Antistaphylococcic	
Antistreptococcic	
Antitumor	Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (Eugenia caryophyllata) As Potential Anticarcinogenic Agents. Journal of Natural Products 55(7): 999-1003, 1992.
Antiulcer	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Candidicide	
FLavor FEMA 20-200	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Gastroprotective	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Insectifuge	
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Larvicide	
Mosquitocide	
Perfumery	Merck 11th Edition
Pesticide	
Sedative	
Termitifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.

CEDROL

Root

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**Activities (3)**

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

CHLOROGENIC-ACID

Plant

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Pakistan Encyclopedia Planta Medica. 1986.

**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 Chrysanthemum indicum L. Chem Pharm Bull, 47(3): 340-345.
Allelochemic	
Allergenic	
Analgesic	
AntiEBV	Economic & Medicinal Plant Research, 6: 189.
AntiHIV	Economic & Medicinal Plant Research, 6: 189.
AntiLegionella	
Antiatherosclerotic	
Antibacterial	
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidiabetic	
Antifeedant	
Antigenotoxic	
Antigonadotropic	Jim Duke's personal files.

Antihemolytic 10 uM	Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatotoxic	
Antiherpetic	Economic & Medicinal Plant Research, 5: 194.
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Antileukotriene	
Antimelanogenic	
Antimutagenic	
Antinitrosaminic	
Antioxidant IC53=200 ppm	Huang, M-T., and Ferraro, T. Phenolic Compounds in Food and Cancer Prevention. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.2 p.21.
Antioxidant IC80=12 uM	
Antioxidant IC50=54.2 uM	
Antiperoxidant IC50=36 uM	<i>Planta Medica</i> , 57: A54, 1991.
Antipolio	Jim Duke's personal files.
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwashashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 9 x quercetin	
Antiseptic	
Antisunburn	
Antithyroid	Jim Duke's personal files.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	
Antitumor (Skin)	
Antitumor-Promoter IC25=10 uM	
Antiulcer	Economic & Medicinal Plant Research, 6: 189.
Antiviral	Vlietinck, A.J. and Dommissse, R.A. eds. 1985. <i>Advances in Medicinal Plant Research</i> . Wiss. Verlag. Stuttgart.
Autotoxic	
CNS-Active	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . 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. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 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	Economic & Medicinal Plant Research, 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	

CHRYSANTHENOL-ACETATE	Root	--	--	*
CHRYSANTHENYL-ACETATE-I	Root	--	7.0	*
CHRYSANTHENYL-ACETATE-II	Root	1.0	95.0	*
CIS-1-ETHOXY-2-P-MENTHENE	Root	--	16.0	*
CIS-3-ETHOXY-1-P-MENTHENE	Root	--	8.0	*
CIS-4-ETHOXY-2-PINENE	Root	--	5.0	*
CIS-4-ETHOXY-PIN-2-ENE	Root Essent. Oil	--	--	*
CIS-4-ETHOXY-THUJANE	Root Essent. Oil	--	--	*
CIS-4-ETHOXY-THUJANE	Root	--	6.0	*
CIS-6-NITRO-1(7),2-P-MENTHADIENE	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
CIS-ALPHA-COPAENE-8-OL	Plant	--	--	*
CIS-BETA-FARNESENE	Root	--	--	*
CIS-CARVEOL-ACETATE	Root Essent. Oil	--	--	*
CIS-CARVYL-ACETATE	Root	--	2.0	*
CIS-OCIMENE	Root	4.0	125.0	*

#### Activities (3)

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.
Fungicide	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.

CIS-OCIMENE	Root Essent. Oil	--	--	*
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#### Activities (3)

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.
Fungicide	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.

CIS-P-MENTH-2-EN-1-OL	Root	--	62.0	*
CIS-PIPERITOL	Root Essent. Oil	--	--	*
CIS-PIPERITOL	Root	--	8.0	*
CIS-SABINENE-HYDRATE	Root Essent. Oil	--	--	*
CIS-SABINENE-HYDRATE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
CIS-THUJENOL	Root	--	--	*
CIS-VERBENOL	Root	3.0	10.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
CIS-VERBENOL	Root Essent. Oil	--	--	*
CONIFERIN	Root	--	--	Pakistan Encyclopedia Planta Medica. 1986.

#### Activities (2)

Herbicide IC90-95=1,000 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.
Pesticide	

CONIFERIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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#### Activities (2)

Herbicide IC90-95=1,000 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.
Pesticide	

CRYPTONE	Root	16.0	50.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
CRYPTONE	Root Essent. Oil	--	--		*
CUMINYL-ALCOHOL	Root	--	2.0		*
CUMINYL-ALCOHOL	Root Essent. Oil	--	--		*
CUMINYL-ALDEHYDE	Root Essent. Oil	--	--		*
CUPARENE	Root	3.0	10.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<b>Activities (1)</b>					
Antiinflammatory					
CUPARENE	Root Essent. Oil	--	--		*
<b>Activities (1)</b>					
Antiinflammatory					
CYMEN-8-OL	Root	6.0	18.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
CYMENE	Root	--	--		*
D-ALPHA-PHELLANDRENE	Root	15.0	2660.0		*
D-ALPHA-PHELLANDRENE	Seed	1140.0	7220.0	-1.0	Wealth of India.
DECA-TRANS-2,TRANS-4-DIEN-1-AL	Root	--	--		*
DECAN-2-ONE	Root Essent. Oil	--	--		*
DEHYDROASCORBIC-ACID	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
DEHYDRODEOXYANGELICAN	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
DELTA-3-CARENE	Root	30.0	505.0	1.41	*
<b>Activities (8)</b>					
Allergenic?					
Antibacterial	Revista Itiliana Epos, 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	Root Essent. Oil	--	--		*
<b>Activities (9)</b>					
Aldose-Reductase-Inhibitor					
Antiacne					
Antibacterial MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.				
Anticariogenic MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.				
Antistreptococcic					
Cytochrome-P450-Inducer					
P450-Inducer					
Pesticide					
Testosterone-Inducer					
DELTA-CADINENE	Root	1.0	101.0	1.41	*



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

DELTA-ELEMENE	Root	--	--		*
DELTOIN	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
DIACETYL	Root	--	--		Pakistan Encyclopedia Planta Medica. 1986.

Activities (2)					
FLavor FEMA 3-50	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.				

DIHYDROCARVONE	Plant	--	--		*
DIHYDROCARVONE	Seed	160.0	1025.0	0.0	*
DIHYDROEUDES MOL	Root	--	--		*
DIHYDROFURANOCOUMARIN	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
DIHYDROFUROCOUMARIN-GLYCOSIDE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
DIPRENYL-NARINGENIN	Root	--	--		Wealth of India.
EICOSANE	Root	--	5.0	-1.0	*
EICOSENOIC-ACID	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
EICOSENOIC-ACID	Fruit	--	--		*
ELEMOL	Root	--	18.0		*

Activities (2)					
Antiacetylcholinesterase IC50=34 ug/ml					
Antiulcer					

ELEMOL	Root Essent. Oil	--	--		*
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Activities (2)					
Antiacetylcholinesterase IC50=34 ug/ml					
Antiulcer					

EO	Seed	2000.0	38000.0	-0.07	*
EO	Root	1000.0	19000.0	0.24	*
ERGOSTEROL	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.

Activities (5)					
Antiangiogenic					
Antiflu					
Antitumor					
Antiviral					
Pesticide					

ERGOSTEROL	Fruit	--	--		*
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Activities (5)				
Antiangiogenic				
Antiflu				
Antitumor				
Antiviral				
Pesticide				

ETHANOL	Root	--	--	*
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Activities (24)				
Allergenic				
Anesthetic 4,000 orl cat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Anesthetic 6,000 orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Anhydrotic	Martindale's 29th			
Antiatherosclerotic				
Antibacterial	Martindale's 28th			
Antipruritic	Martindale's 28th			
Antiseptic	Merck 11th Edition			
CNS-Depressant	Martindale's 28th			
Expectorant	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.			
Hepatotoxic	Martindale's 29th			
Hypertensive >1 drink/day				
Hypnotic Antidote=Naloxone	Martindale's 29th			
Hypocalcemic 4,000 orl rat	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Hypotensive 1 drink/day				
Mucotropic	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.			
Neurolytic	Merck 11th Edition			
Pesticide				
Rubefacient	Martindale's 29th			
Sclerosant	Martindale's 29th			
Surfactant	Schulz, V, Hansel, R and Tyler, VE. 1998. Rational Phytotherapy - A Physician's Guide to Herbal Medicine. 3rd ed. 1st English Edition. Translated by Terry C. Telger. Springer Verlag, Heidelberg. 306 pp.			
Teratogenic 6,000 orl dog	Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.			
Tremorilytic	Martindale's 28th			
Ulcerogenic 5 ml/kg (50%) orl rat				

ETHYL-CAPRATE	Root Essent. Oil	--	--	*
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ETHYL-CAPRATE	Root	--	--	*
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ETHYL-LAURATE	Root	--	--	*
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Activities (1)				
FLavor FEMA <1-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			

ETHYL-LINOLEATE	Root	--	8.0	*
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ETHYL-LINOLENATE	Root	--	--	*
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ETHYL-MYRISTATE	Root	--	--	*
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Activities (1)				
FLavor FEMA 6-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			

ETHYL-MYRISTATE	Root Essent. Oil	--	--	*
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Activities (1)				
FLavor FEMA 6-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			

ETHYL-OLEATE	Root	--	--	*
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<b>Activities (1)</b>					
FLavor FEMA 0.1-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
ETHYL-PALMITATE	Root	--	10.0		*
<b>Activities (1)</b>					
FLavor FEMA 20-50	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
ETHYL-PENTADECANOATE	Root Essent. Oil	--	--		*
ETHYL-PENTADECANOATE	Root	--	--		*
ETHYL-STEARATE	Root	--	--		*
FAT	Seed	189000.0	203000.0	-0.33	*
FENCHONE	Root Essent. Oil	--	--		*
<b>Activities (6)</b>					
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.				
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.				
Counterirritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
FLavor FEMA 0.1-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Perfumery	Merck 11th Edition				
Secretolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.				
FENCHONE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (6)</b>					
Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.				
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.				
Counterirritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
FLavor FEMA 0.1-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Perfumery	Merck 11th Edition				
Secretolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.				
FRUCTOSE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (8)</b>					
Antialcoholic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antidiabetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antihangover					
Antiketotic	Merck 11th Edition				
Antinauseant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Laxative					
Neoplastic	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses				
Sweetener 2 x glucose	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
FUMARIC-ACID	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (7)</b>					
Acidulant	Martindale's 28th				
Antidermatitic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.				
Antihpatocarcinogenic IC100=1% (diet)	Akao, M. and Kuroda, K. 1990. Inhibitory Effect of Fumaric Acid on Hepatocarcinogenesis by Thioacetamide in Mice. Chem. Pharm. Bull. 38(7): 2012-2014, 1990.				
Antioxidant	Merck 11th Edition				
Antipsoriac	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.				
Antitumor	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
FLavor FEMA 50-3,600	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
FURANCHROMONE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
FURANOCOUMARIN	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.

Activities (6)					
Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Fungicide					
Insecticide					
Irritant	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.				
Pesticide					

GAMMA-CADINENE	Plant	--	--		*
GAMMA-CADINENE	Root	2.0	14.0	1.0	*
GAMMA-CARYOPHYLLENE	Root	--	6.0		*
GAMMA-MUUROLENE	Root	1.0	4.0	-1.0	*
GAMMA-MUUROLENE	Root Essent. Oil	--	--		*
GAMMA-TERPINENE	Root Essent. Oil	--	--		*

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	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 reviewed book by Coats and draft by Henry				
Pesticide					

GAMMA-TERPINENE	Root	1.0	12.0	-0.8	*
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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	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 reviewed book by Coats and draft by Henry				
Pesticide					

GAMMA-TERPINEOL	Root	--	--		*
GERMACRENE-D	Root Essent. Oil	--	--		*

Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Root	2.0	26.0	1.0	*
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Activities (2)					
Pesticide					
Pheromone					
GERMANIUM	Root	--	146.0	-1.0	*
GLUCOSE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
Activities (7)					
Acetylcholinergic					
Antiedemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antihepatotoxic	Merck 11th Edition				
Antiketotic	Merck 11th Edition				
Antivaricose	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Hyperglycemic	Merck 11th Edition				
Memory-Enhancer	Science News, 138: 189, 1990.				
GLUTAMINE	Leaf	--	--		*
Activities (5)					
Antialcoholic 1,000 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antidepressant	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.				
Antisickling					
Antiulcer 1,600 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Catabolic	Tramil				
HEPTADECADIENOLIDE	Root Essent. Oil	--	10000.0		*
HEPTADECAN-1-OL-ACETATE	Root	--	--		*
HEPTADECANE	Root	--	7.0		*
HEPTADECANOLIDE	Root	--	--		*
HEPTADECANOLIDE	Root Essent. Oil	--	--		*
HEPTYL-ISOVALERATE	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
HEPTYL-ISOVALERATE	Root Essent. Oil	--	--		*
HERACLENOL-2'-O-ISOVALERATE	Root	--	13.0		*
HERACLENOL-2'-O-SENECIOATE	Root	--	1.0		*
HEXADECAN-1-OL	Root	--	--		*
HEXADECANE	Root	--	7.0	1.0	*
HEXYL-METHYL-PHTHALATE	Seed	3600.0	13680.0		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
HUMULENE-MONOXIDE	Root Essent. Oil	--	--		*
HUMULENE-MONOXIDE	Root	13.0	40.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
HYDROXYMYRISTIC-ACID	Seed	--	--		*
HYDROXPENTADECANOIC-ACID	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
IMPERATORIN	Plant	--	--		*

**Activities (25)**

Antiaflatoxin IC50=2.66 uM	
Antiaflatoxin 0.7 ppm	
Antiaggregant	
Antialopecic	Martindale's 28th
Anticonvulsant	
Antiinflammatory	
Antileukodermic	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antiplatelet	
Antitumor-Promoter IC86=50 ug/ml	
Antivertiliginic	
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=4 ug/ml	
Calcium-Antagonist 31.6 ug/ml gpg	
Cancer-Preventive 5- 25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytochrome-P450- Inhibitor 2 nM	
DME-Inhibitor IC50=116 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.
Hepatoprotective IC50=2.66 uM	
Hepatoprotective 0.7 ppm	
Hepatotoxic	
Lipolytic	
Molluscicide	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Sedative	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms ( <i>Flores Graminis</i> , <i>Graminis Flos</i> ) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.

IMPERATORIN	Seed	50.0	5000.0	0.2	*
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**Activities (25)**

Antiaflatoxin IC50=2.66 uM	
Antiaflatoxin 0.7 ppm	
Antiaggregant	
Antialopecic	Martindale's 28th
Anticonvulsant	
Antiinflammatory	
Antileukodermic	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antiplatelet	
Antitumor-Promoter IC86=50 ug/ml	
Antivertigic	
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=4 ug/ml	
Calcium-Antagonist 31.6 ug/ml gpg	
Cancer-Preventive 5- 25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytochrome-P450- Inhibitor 2 nM	
DME-Inhibitor IC50=116 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.
Hepatoprotective IC50=2.66 uM	
Hepatoprotective 0.7 ppm	
Hepatotoxic	
Lipolytic	
Molluscicide	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Sedative	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms ( <i>Flores Graminis, Graminis Flos</i> ) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.

IMPERATORIN                      Fruit                      --                      66.0                      1.94                      \*

**Activities (25)**

Antiaflatoxin IC50=2.66 uM	
Antiaflatoxin 0.7 ppm	
Antiaggregant	
Antialopecic	Martindale's 28th
Anticonvulsant	
Antiinflammatory	
Antileukodermic	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antiplatelet	
Antitumor-Promoter IC86=50 ug/ml	
Antivertigic	
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=4 ug/ml	
Calcium-Antagonist 31.6 ug/ml gpg	
Cancer-Preventive 5- 25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytochrome-P450- Inhibitor 2 nM	
DME-Inhibitor IC50=116 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.
Hepatoprotective IC50=2.66 uM	
Hepatoprotective 0.7 ppm	
Hepatotoxic	
Lipolytic	
Molluscicide	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Sedative	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms ( <i>Flores Graminis</i> , <i>Graminis Flos</i> ) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.

IMPERATORIN

Root

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\*



**Activities (25)**

Antiaflatoxin IC50=2.66 uM	
Antiaflatoxin 0.7 ppm	
Antiaggregant	
Antialopecic	Martindale's 28th
Anticonvulsant	
Antiinflammatory	
Antileukodermic	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antiplatelet	
Antitumor-Promoter IC86=50 ug/ml	
Antivittilgic	
Bufoicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=4 ug/ml	
Calcium-Antagonist 31.6 ug/ml gpg	
Cancer-Preventive 5- 25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytochrome-P450- Inhibitor 2 nM	
DME-Inhibitor IC50=116 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.
Hepatoprotective IC50=2.66 uM	
Hepatoprotective 0.7 ppm	
Hepatotoxic	
Lipolytic	
Molluscicide	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Sedative	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms ( <i>Flores Graminis, Graminis Flos</i> ) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.

IMPERATORIN

Shoot

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**Activities (25)**

Antiaflatoxin IC50=2.66 uM	
Antiaflatoxin 0.7 ppm	
Antiaggregant	
Antialopecic	Martindale's 28th
Anticonvulsant	
Antiinflammatory	
Antileukodermic	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antiplatelet	
Antitumor-Promoter IC86=50 ug/ml	
Antivittilicic	
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=4 ug/ml	
Calcium-Antagonist 31.6 ug/ml gpg	
Cancer-Preventive 5- 25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytochrome-P450- Inhibitor 2 nM	
DME-Inhibitor IC50=116 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.
Hepatoprotective IC50=2.66 uM	
Hepatoprotective 0.7 ppm	
Hepatotoxic	
Lipolytic	
Molluscicide	
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Sedative	Buchbauer, G., Jirovetz*, L., Nikiforov, A., Remberg, G., Raverdino, V. 1989. Headspace-Analysis and Aroma Compounds of Austrian Hay-Blossoms ( <i>Flores Graminis, Graminis Flos</i> ) used in Aromatherapy. <i>J. Ess. Oil Res.</i> , 2: 185-191, 1990.

ISELIN	Plant	--	--		Pakistan Encyclopedia <i>Planta Medica</i> . 1986.
ISOAMYL-ISOVALERATE	Root Essent. Oil	--	--		*
ISOAMYL-ISOVALERATE	Root	--	2.0		Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i>
ISOBERGAPTEN	Fruit	--	--		*
ISOBERGAPTEN	Root Essent. Oil	--	88000.0		*
ISOBERGAPTIN	Plant	--	--		Pakistan Encyclopedia <i>Planta Medica</i> . 1986.
ISOBERGAPTOL	Plant	--	--		Pakistan Encyclopedia <i>Planta Medica</i> . 1986.
ISOCOUMARIN	Plant	--	--		Pakistan Encyclopedia <i>Planta Medica</i> . 1986.
ISOIMPERATORIN	Seed	12.0	75.0	1.0	Wealth of India.

**Activities (8)**

Antitumor-Promoter IC94=50 ug/ml	
Artemicide ED50=6->100 ug/ml	
Calcium-Antagonist	
Cytochrome-P450-Inhibitor 2 nM	
Cytotoxic (Breast) ED50=6.56 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=>10 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
DME-Inhibitor IC50=46 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.
Pesticide	

ISOIMPERATORIN	Root	--	--		*
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Activities (8)				
Antitumor-Promoter IC94=50 ug/ml				
Artemicide ED50=6->100 ug/ml				
Calcium-Antagonist				
Cytochrome-P450-Inhibitor 2 nM				
Cytotoxic (Breast) ED50=6.56 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
Cytotoxic (Colon) ED50=>10 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
DME-Inhibitor IC50=46 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.			
Pesticide				

ISOIMPERATORIN                      Shoot                      --                      --                      \*

Activities (8)				
Antitumor-Promoter IC94=50 ug/ml				
Artemicide ED50=6->100 ug/ml				
Calcium-Antagonist				
Cytochrome-P450-Inhibitor 2 nM				
Cytotoxic (Breast) ED50=6.56 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
Cytotoxic (Colon) ED50=>10 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
DME-Inhibitor IC50=46 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.			
Pesticide				

ISOIMPERATORIN                      Plant                      --                      --                      \*

Activities (8)				
Antitumor-Promoter IC94=50 ug/ml				
Artemicide ED50=6->100 ug/ml				
Calcium-Antagonist				
Cytochrome-P450-Inhibitor 2 nM				
Cytotoxic (Breast) ED50=6.56 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
Cytotoxic (Colon) ED50=>10 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
DME-Inhibitor IC50=46 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.			
Pesticide				

ISOIMPERATORIN                      Fruit                      --                      4.0                      -0.96                      \*

Activities (8)				
Antitumor-Promoter IC94=50 ug/ml				
Artemicide ED50=6->100 ug/ml				
Calcium-Antagonist				
Cytochrome-P450-Inhibitor 2 nM				
Cytotoxic (Breast) ED50=6.56 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
Cytotoxic (Colon) ED50=>10 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.			
DME-Inhibitor IC50=46 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.			
Pesticide				

ISOLEUCINE                      Leaf                      --                      --                      \*

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.

**Activities (15)**

## Antiappetant

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

## Antiinflammatory 100 ppm

## Antilipogenic

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

## Antitubercular

## Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

## Diuretic 125 mg/kg

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

## Insecticide

## Molluscicide

## Mutagenic

## Pesticide

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

**Activities (15)**

## Antiappetant

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

## Antiinflammatory 100 ppm

## Antilipogenic

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

## Antitubercular

## Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

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## Insecticide

## Molluscicide

## Mutagenic

## Pesticide

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

**Activities (15)**

## Antiappetant

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

## Antiinflammatory 100 ppm

## Antilipogenic

Antimitotic 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

## Antitubercular

## Calcium-Antagonist

Cancer-Preventive 5-25 ug/ml Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

## Diuretic 125 mg/kg

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

## Insecticide

## Molluscicide

## Mutagenic

## Pesticide

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

Activities (15)				
Antiappetant				
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
Antiinflammatory 100 ppm				
Antilipogenic				
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.			
Antitubercular				
Calcium-Antagonist				
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.			
Diuretic 125 mg/kg				
Fungicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Insecticide				
Molluscicide				
Mutagenic				
Pesticide				
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

KVANNIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
LAURIC-ACID	Fruit	--	--	*

Activities (7)				
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.)			

LAURIC-ACID-ETHYL-ESTER	Root Essent. Oil	--	--	*
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Activities (1)				
Calcium-Antagonist 0.5 g/kg scu rbt				

LIGUSTILIDE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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Activities (7)				
Antiarrhythmic				
Antiasthmatic				
Anticonstrictive				
Antiprostaglandin				
Antispasmodic				
Myorelaxant				
Tracheorelaxant				

LIGUSTILIDE	Root	--	--	*
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Activities (7)				
Antiarrhythmic				
Antiasthmatic				
Anticonstrictive				
Antiprostaglandin				
Antispasmodic				
Myorelaxant				
Tracheorelaxant				

LIMONENE	Root	--	1320.0	1.73	*
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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	
Anti-acetylcholinesterase 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	<i>Revista Itiliana Eppos</i> , 12: 5, 1994.
Anticancer	
Antiesophagitic	
Antifeedant	
Antiflu	<i>Economic &amp; Medicinal Plant Research</i> , 5: 195.
Antiinflammatory	
Antilithic	
Antilymphomic	
Antimetastatic (Stomach)	
Antimutagenic	<i>Economic &amp; Medicinal Plant Research</i> , 6: 235.
Antiobesity	
Antiseptic	
Antispasmodic ED50=0.197 mg/ml	<i>Fitoterapia</i> No.59-1984.
Antitumor	
Antitumor (Breast)	
Antitumor (Colon)	
Antitumor (Pancreas)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antiviral	
Apoptotic	
Bronchoprotectant	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidistat	
Chemopreventive	
Cholesterolytic	
Detoxicant	
Enterocontractant	<i>J. Aromatherapy</i> 4: 22.
Expectorant	
Flavor	
Fungiphilic	<i>J. Agric. Food Chem.</i> 43: 2283.
Fungistat	
GST-Inducer	
Herbicide IC50=45 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Histaminic	
Immunomodulator	
Insecticide 0.37 uM/fly	
Insectifuge	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , 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. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Ornithine-Decarboxylase-Inhibitor ~750 mg/kg (diet)	
Ozone-Scavenger	
P450-Inducer	
Peristaltic	
Pesticide	
Photosensitizer	Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments</i> . Facts on File, New York. 199 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Transdermal	

LIMONENE-1,2-OXIDE	Plant	--	15.0		*
LINALOL	Root	--	1.0	-0.74	*
LINALOOL	Root	--	10.0	-0.42	*



**Activities (53)**

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

LINALOOL

Root Essent. Oil --

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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.
CNS-Depressant	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidistat	
Carminative	
Culicide LC50=156-194 mg/l	
Cytotoxic	
Expectorant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
FLavor FEMA 2-40	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Acta Botanica Sinica, 32: 49.
GABA-nergic	
Hypnotic	
Hypothermic	
Insecticide LC50=156-194 mg/l	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Larvicide LC50=156-194 mg/l	
Mosquitofuge > Deet	
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Merck 11th Edition
Pesticide	
Prooxidant	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Sedative 200 mg/kg ipr mus (1% as active as diazepam)	
Termitifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Trichomonicide LD100=600 ug/ml	
Tumor-Promoter	

LINOLEIC-ACID

Fruit

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\*

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

AntiMS	Economic & Medicinal Plant Research, 6: 189.
Antiacne	
Antiallopecic	
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.
Propepic	

LINOLEIC-ACID-ETHYL-ESTER	Root Essent. Oil	--	--	*
LINOLENIC-ACID-ETHYL-ESTER	Root Essent. Oil	--	--	*
LUPEOL-ACETATE	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.

**Activities (2)**

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

LUPEOL-ACETATE	Fruit	--	40.0	*
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**Activities (2)**

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

LUTEIN	Leaf	--	--	*
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**Activities (15)**

Antiatherosclerotic	
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Antimaculitic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antinyctalopic	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antioxidant	
Antiproliferant	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.
Antiradicular	
Antiretinitic Optometry	
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Antitumor (Colon)	
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Prooxidant 5-40 ug/g	
Quinone-Reductase-Inducer 2.5 ug	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Retinoprotectant Optometry	
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

M-CYMEN-8-OL                      Root                      --                      9.0                      \*

M-CYMENE-8-OL                      Root Essent. Oil                      --                      --                      \*

MALIC-ACID                      Root                      --                      --                      \*

**Activities (15)**

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

MALIC-ACID                      Plant                      --                      --                      \*

**Activities (15)**

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

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

**Activities (1)**

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

MARMESIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

MARMESININE Plant -- -- \*

MARMEZIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

METHANOL Root -- -- \*

**Activities (2)**

AntiHIV EC50=<20 ug/ml

Antidote #NAME? Martindale's 29th

METHYL-ETHYL-ACETIC-ACID Seed -- -- \*

METHYL-ETHYL-ACETIC-ACID Root -- -- \*

MYRCENE Fruit -- -- \*

**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., Paumgarten, 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., Paumgarten, 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 Seed Essent. Oil -- -- \*

**Activities (22)**

ACE-Inhibitor 100 ug/ml

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

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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

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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 &amp; Frost, London. 791 pp.

Pesticide

MYRCENE Root Essent. Oil -- -- \*

**Activities (22)**

ACE-Inhibitor 100 ug/ml

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

Allergenic

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

Antibacterial

Anticonvulsant

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

Antinitrosaminic

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

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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 &amp; Frost, London. 791 pp.

Pesticide

MYRCENE Root 7.0 380.0 1.41 \*

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					

MYRISTIC-ACID	Fruit	--	--		*
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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.				

NONADECANE	Root	--	5.0	1.0	*
NONAN-1-AL	Root Essent. Oil	--	--		*
NONAN-2-ONE	Root Essent. Oil	--	--		*
NONANAL	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
O-CYMENE	Root Essent. Oil	--	--		*
O-CYMENE	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
OCTADEC-9-EN-18-OLIDE	Root Essent. Oil	--	20000.0		*
OCTADECAN-1-OL	Root	--	--		*
OCTADECANE	Root	--	5.0		*
OCTAN-1-AL	Root Essent. Oil	--	--		*
OCTANAL	Root	--	1.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
OCTYL-ISOVALERATE	Root Essent. Oil	--	--		*

Activities (2)					
FLavor FEMA 0.5-5	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				

OCYTL-ISOVALERATE                      Root                      --                      --                      Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

**Activities (2)**

FLavor FEMA 0.5-5                      Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry  
 Perfumery                      Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

OLEIC-ACID                      Seed                      --                      133000.0    0.11                      \*

**Activities (18)**

5-Alpha-Reductase-Inhibitor  
 Allergenic  
 Alpha-Reductase-Inhibitor  
 Anemiagenic  
 Antialopecic  
 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.  
 Choleric 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-ETHYL-ESTER                      Root Essent. Oil    --                      --                      \*

**Activities (1)**

Calcium-Antagonist 0.5 g/kg scu rbt

OROSELONE                      Root Essent. Oil    --                      25000.0                      \*

OROSELONE                      Plant                      --                      --                      \*

OSTHENOL                      Root                      --                      115.0                      \*

OSTHENOL                      Shoot                      --                      --                      \*

OSTHENOL                      Fruit                      --                      --                      \*

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

OSTHOL                      Root                      --                      2000.0                      \*



**Activities (15)**

5-Lipoxygenase-Inhibitor

Analgesic

Antiallergic

Antiinflammatory IC62  
800 ppm orlAntimalarial IC50=25.1  
ug/ml

Khalid, S.A., Farouk, A., Geary\*\*, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using Plasmodium falciparum\*. Journal of Ethnopharmacology, 15: 201-209, 1986.

Antimitotic 5-25 ug/ml

Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

Antimutagenic

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

Calcium-Antagonist  
IC50=4 ug/mlCalcium-Antagonist 40  
uM ratCalcium-Antagonist 100  
uMCancer-Preventive 5-25  
ug/ml

Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

Immunosuppressant

Juvabional

Pesticide

Xanthine-Oxidase-  
Inhibitor IC10=10 uM

OSTHOL

Fruit

--

--

\*

**Activities (15)**

5-Lipoxygenase-Inhibitor

Analgesic

Antiallergic

Antiinflammatory IC62  
800 ppm orlAntimalarial IC50=25.1  
ug/ml

Khalid, S.A., Farouk, A., Geary\*\*, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using Plasmodium falciparum\*. Journal of Ethnopharmacology, 15: 201-209, 1986.

Antimitotic 5-25 ug/ml

Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

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Calcium-Antagonist  
IC50=4 ug/mlCalcium-Antagonist 40  
uM ratCalcium-Antagonist 100  
uMCancer-Preventive 5-25  
ug/ml

Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.

Immunosuppressant

Juvabional

Pesticide

Xanthine-Oxidase-  
Inhibitor IC10=10 uM

OSTHOL

Root Essent. Oil

--

530000.0

\*



OXYPEUCEDANIN	Plant	--	--	*	
<b>Activities (6)</b>					
Antitumor-Promoter IC32=50 ug/ml					
Calcium-Antagonist IC50=1.2 ug/ml					
DME-Inhibitor IC50=81 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.				
Fungicide MIC=10 ug					
Lipolytic					
Mutagenic	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
OXYPEUCEDANIN	Shoot	--	--	*	
<b>Activities (6)</b>					
Antitumor-Promoter IC32=50 ug/ml					
Calcium-Antagonist IC50=1.2 ug/ml					
DME-Inhibitor IC50=81 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.				
Fungicide MIC=10 ug					
Lipolytic					
Mutagenic	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
OXYPEUCEDANIN	Fruit	--	--	*	
<b>Activities (6)</b>					
Antitumor-Promoter IC32=50 ug/ml					
Calcium-Antagonist IC50=1.2 ug/ml					
DME-Inhibitor IC50=81 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.				
Fungicide MIC=10 ug					
Lipolytic					
Mutagenic	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
OXYPEUCEDANIN-HYDRATE	Plant	--	--	*	
<b>Activities (2)</b>					
Antihistaminic 25 mg/kg ipr mus					
Calcium-Antagonist					
OXYPEUCEDANIN-HYDRATE	Shoot	--	--	*	
<b>Activities (2)</b>					
Antihistaminic 25 mg/kg ipr mus					
Calcium-Antagonist					
OXYPEUCEDANIN-HYDRATE	Root	--	1500.0	*	
<b>Activities (2)</b>					
Antihistaminic 25 mg/kg ipr mus					
Calcium-Antagonist					
OXYPEUCEDANIN-HYDRATE	Fruit	--	--	*	
<b>Activities (2)</b>					
Antihistaminic 25 mg/kg ipr mus					
Calcium-Antagonist					
OXYPEUCEDANIN-HYDRATE	Seed	0.6	3.8	-1.0	Wealth of India.
<b>Activities (2)</b>					
Antihistaminic 25 mg/kg ipr mus					
Calcium-Antagonist					
OXYPEUCEDANIN	Root	--	--	*	

OXYPEUCIDANIN-HYDRATE	Root	--	--		*
OXYPEUCIDANIN-METHANOLATE	Root	--	--		*
P-CYMEN-8-OL	Root	1.0	31.0		*
P-CYMENE	Seed	800.0	5050.0	0.58	Wealth of India.

#### 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-CYMENE	Root	40.0	980.0	1.73	*
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#### Activities (16)

Analgesic	Martindale's 28th
Antiacetylcholinesterase IC40=1.2 mM	
Antibacillary	
Antibacterial	
Antiflu	
Antirheumatalgic	Martindale's 28th
Antiviral	
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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.
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Pesticide	
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Trichomonicide LD100=50 ug/ml	

P-CYMENE	Root Essent. Oil	--	--		*
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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 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.
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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-8-OL	Root Essent. Oil	--	--	*
P-MENTH-CIS-2-EN-1-OL	Root Essent. Oil	--	--	*
P-MENTH-TRANS-2-EN-1-OL	Root Essent. Oil	--	--	*
PALMITIC-ACID	Fruit	--	--	*

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

PALMITIC-ACID	Root Essent. Oil	--	60000.0	-0.15	*
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Activities (13)	
5-Alpha-Reductase-Inhibitor	
Antialoepic	
Antiandrogenic	
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.
Antioxidant IC40=60	
FLavor FEMA 1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
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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.

PALMITIC-ACID	Seed	--	--		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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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 reviewd book by Coats and draft by Henry			
Hemolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.			
Hypercholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)			
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.			
Pesticide				
Propepic				
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

PALMITIC-ACID-ETHYL-ESTER	Root Essent. Oil	--	--	*
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Activities (1)				
Calcium-Antagonist 0.5 g/kg scu rbt				

PALMITOLEIC-ACID	Fruit	--	--	*
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Activities (2)				
5-Alpha-Reductase-Inhibitor				
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

PALMITOLEIC-ACID	Seed	--	--	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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Activities (2)				
5-Alpha-Reductase-Inhibitor				
Soap	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

PENTADECAN-1-AL	Root Essent. Oil	--	--	*
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PENTADECAN-1-AL	Root	--	--	*
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PENTADECANAL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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PENTADECANOIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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Activities (1)				
Antioxidant IC40=60				

PENTADECANOLIDE	Root	15.0	37.0	*
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PENTADECANOLIDE	Root Essent. Oil	--	60000.0	*
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PETROSELINIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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PETROSELINIC-ACID	Seed	--	427000.0 -0.49	*
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PETROSELINIC-ACID	Fruit	--	--	*
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PEUCENIN-7-METHYL-ETHER	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
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PHELLANDRAL	Root	--	4.0	*
-------------	------	----	-----	---

PHELLOPTERIN	Plant	--	--	*
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Activities (2)				
Calcium-Antagonist				
Lipolytic				

PHELLOPTERIN	Root	--	--	Phytochem. Anal. 3(1):42-48. 1992
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<b>Activities (2)</b>					
Calcium-Antagonist					
Lipolytic					
PHENYLALANINE	Leaf	--	--		*
<b>Activities (7)</b>					
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				
PIMPINELLIN	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
<b>Activities (7)</b>					
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antitubercular	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Diuretic 125 mg/kg					
Fungicide					
Pesticide					
Phototoxic					
Phytoalexin					
PIMPINELLIN	Fruit	--	--		*
<b>Activities (7)</b>					
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antitubercular	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Diuretic 125 mg/kg					
Fungicide					
Pesticide					
Phototoxic					
Phytoalexin					
PIPERITONE	Root	--	3.0		*
<b>Activities (7)</b>					
Antiasthmatic					
FLavor FEMA 1-2	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Herbicide IC50=30 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=75 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 (> DEET)	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 reviewd book by Coats and draft by Henry				
Pesticide					
PRANGOLARIN	Root	--	--		*
PRANGOLARIN	Seed	12.0	75.0		Wealth of India.
PRANGOLARIN	Plant	--	--		*
PROTEIN	Seed	319000.0	325000.0	0.81	*
PSORALEN	Plant	--	--		*

**Activities (31)**

Antidepressant IC50=15-62 uM	
Antileukodermic	Merck 11th Edition
Antimitotic	Pandeya, S.N. 1970. Biological Activity of Adamantyl Derivatives. The Indian Journal of Pharmacy, 33: 7.
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.
Antipsoriac	Merck 11th Edition
Antispasmodic	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.
Antitubercular	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antitumor	
Antitumor-Promoter IC13=50 ug/ml	
Antiviral	Economic & Medicinal Plant Research, 5: 199.
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.
Bacteriophagicide	de Vries, D. J. and Blumberg, P. M., Thermoregulatory effects of resiniferatoxin in the mouse: comparison with capsaicin, Life Sciences, 44, 1989, 711-715.
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Contraceptive	
Cytotoxic ED50=2-30 ug/ml	
Cytotoxic (Breast) ED50=2.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.
Cytotoxic (Colon) ED50=26.84 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.
Cytotoxic (Lung) ED50=30.38 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.
Fungicide	Merck 11th Edition
Genotoxic	Merck 11th Edition
Hypotensive	
Insecticide	Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
MAO-A-Inhibitor IC50=15 uM	
MAO-B-Inhibitor IC50=62 uM	
Mutagenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Photocarcinogenic	
Phototoxic	
Phytoalexin	Merck 11th Edition
Topoisomerase-II-Inhibitor ID50=10 mM	Hu, C. Q., Lee, K. S. 1992. Coumarins From the Roots of Seseli mairei and Inhibition of DNA Topoisomerase II Activity. Tianran Chanwu Yanjiu Yu Kaifa, 4: 6-10.

PSORALEN                      Seed                      --                      100.0                      -0.69                      \*







Activities (31)				
Antidepressant IC50=15-62 uM				
Antileukodermic	Merck 11th Edition			
Antimitotic	Pandeya, S.N. 1970. Biological Activity of Adamantyl Derivatives. The Indian Journal of Pharmacy, 33: 7.			
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.			
Antipsoriac	Merck 11th Edition			
Antispasmodic	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.			
Antitubercular	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antitumor				
Antitumor-Promoter IC13=50 ug/ml				
Antiviral	Economic & Medicinal Plant Research, 5: 199.			
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.			
Bacteriophagicide	de Vries, D. J. and Blumberg, P. M., Thermoregulatory effects of resiniferatoxin in the mouse: comparison with capsaicin, Life Sciences, 44, 1989, 711-715.			
Calcium-Antagonist				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Contraceptive				
Cytotoxic ED50=2-30 ug/ml				
Cytotoxic (Breast) ED50=2.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.			
Cytotoxic (Colon) ED50=26.84 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.			
Cytotoxic (Lung) ED50=30.38 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of Zanthoxylum americanum. Phytotherapy Research 4(6): 216-219.			
Fungicide	Merck 11th Edition			
Genotoxic	Merck 11th Edition			
Hypotensive				
Insecticide	Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.			
MAO-A-Inhibitor IC50=15 uM				
MAO-B-Inhibitor IC50=62 uM				
Mutagenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Pesticide				
Photocarcinogenic				
Phototoxic				
Phytoalexin	Merck 11th Edition			
Topoisomerase-II-Inhibitor ID50=10 mM	Hu, C. Q., Lee, K. S. 1992. Coumarins From the Roots of Seseli mairei and Inhibition of DNA Topoisomerase II Activity. Tianran Chanwu Yanjiu Yu Kaifa, 4: 6-10.			
QUERCETIN-GLYCOSIDE	Fruit	--	--	*
QUINIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
Activities (1)				
Choleretic				Fitoterapia No.5-1986.
ROSIFOLIOL	Root	--	--	*
RUTAMARIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
Activities (4)				
Antispasmodic 20 x papaverine				
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Cytotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
DNA-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
SABINENE	Root Essent. Oil	--	--	*

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

SABINENE	Root	2.0	95.0	0.08	*
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Activities (5)					
Antibacterial					
Antihelicobacter					
Antiseptic					
Antiulcer					
Perfumery					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

SABINOL	Root	--	34.0		*
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Activities (5)					
Anthelmintic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Emmenagogue	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Pesticide					
Toxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				

SABINYL-ACETATE	Root	--	5.0		*
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SCOPOLETIN	Tissue Culture	--	--		*
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**Activities (44)**

Aldose-Reductase-Inhibitor IC50=6.2 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemic IC89=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.
Analgesic	
Anesthetic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antiadrenergic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antiaflatoxin IC50=65 uM	
Antiaflatoxin 11.4 ppm	
Antiarrhythmic	
Antiasthmatic	
Antibacterial	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibronchoconstrictor	
Anticholinergic	
Antiedemic	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihepatotoxic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Antiinflammatory ED 1-10 ug/ear	
Antileukotrienogenic	
Antimutagenic	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingstone, Edinburgh.
Antioxidant	
Antiproliferant	
Antiprostaglandin	
Antiseptic	
Antispasmodic	
Antitumor 2.9 ug/ml	
Apoptotic	
Bronchorelaxant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
CNS-Depressant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
CNS-Stimulant	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. The Medicinal and Poisonous Plants of Southern and Eastern Africa. E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
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.
Cytotoxic	
Fungicide 2 mM	
Hepatoprotective	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Herbicide	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypoglycemic	Economic & Medicinal Plant Research, 6: 165
Hypotensive	
MAO-Inhibitor	
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Myorelaxant	
Pesticide	
Phytoalexin	
Phytohormonal	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Uterosedative	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.

SCOPOLETIN

Root

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**Activities (44)**

Aldose-Reductase-Inhibitor IC50=6.2 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemic IC89=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.
Analgesic	
Anesthetic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antiadrenergic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antiaflatoxin IC50=65 uM	
Antiaflatoxin 11.4 ppm	
Antiarrhythmic	
Antiasthmatic	
Antibacterial	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibronchoconstrictor	
Anticholinergic	
Antiedemic	
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihepatotoxic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Antiinflammatory ED 1-10 ug/ear	
Antileukotrienogenic	
Antimutagenic	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.
Antioxidant	
Antiproliferant	
Antiprostaglandin	
Antiseptic	
Antispasmodic	
Antitumor 2.9 ug/ml	
Apoptotic	
Bronchorelaxant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
CNS-Depressant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
CNS-Stimulant	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. The Medicinal and Poisonous Plants of Southern and Eastern Africa. E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
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.
Cytotoxic	
Fungicide 2 mM	
Hepatoprotective	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Herbicide	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypoglycemic	Economic & Medicinal Plant Research, 6: 165
Hypotensive	
MAO-Inhibitor	
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Myorelaxant	
Pesticide	
Phytoalexin	
Phytohormonal	Jeffery B., Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Uterosedative	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.

SEC-O-BETA-D-GLUCOPYRANOSYL-(R)-BYAKANGELICIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

SPATHULENOL Root -- -- \*

SPHONDIN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

**Activities (1)**

Phototoxic

STEARIC-ACID Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

Activities (8)				
5-Alpha-Reductase-Inhibitor				
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
FLavor FEMA 2-4,000	Aloe Research Council - Duke writeup of non-peer 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.)			
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Propepic				
Suppository	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

STEARIC-ACID	Fruit	--	--	*
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Activities (8)				
5-Alpha-Reductase-Inhibitor				
Cosmetic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
FLavor FEMA 2-4,000	Aloe Research Council - Duke writeup of non-peer 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.)			
Lubricant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Propepic				
Suppository	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			

STEARIC-ACID-ETHYL-ESTER	Root Essent. Oil	--	--	*
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STIGMASTEROL	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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Activities (12)				
Antihepatotoxic				
Antiinflammatory	Lawrence Review of Natural Products, 1995			
Antinociceptive				
Antiphidic 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				

STIGMASTEROL	Fruit	--	--	*
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Activities (12)				
Antihepatotoxic				
Antiinflammatory	Lawrence Review of Natural Products, 1995			
Antinociceptive				
Antiphidic 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				

SUCCINIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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Activities (7)					
Additive FEMA 200-2,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry				
Antifeedant					
Bruchiphobe	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Dye	Merck 11th Edition				
Perfumery	Merck 11th Edition				
Pesticide					

SUCROSE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.	
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Activities (14)					
Aggregant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antihiccup 1 tsp	Martindale's 29th				
Antiophthalmic	Martindale's 29th				
Antioxidant	Merck 11th Edition				
Atherogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Collyrium	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Demulcent	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Flatugenic	Singh, J., Gupta, K., and Arora, S.K. 1993. Changes in the anti-nutritional factors of developing seeds and pod walls of fenugreek ( <i>Trigonella foenum graecum</i> L.). Plant Foods for Human Nutrition. 46: 77-84, 1994.				
Hypercholesterolemic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Preservative	Merck 11th Edition				
Sweetener 1 x sucrose	Merck 11th Edition				
Triglycerigenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Uricogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Vulnerary	Martindale's 29th				

TANNINS	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.	
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TERPINEN-4-OL	Root	--	10.0	-0.57	*
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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.				
Antiacholinesterase 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.				

TERPINEN-4-OL	Root Essent. 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.
Antiacetylcholinesterase 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.

TERPINENOL	Root Essent. Oil	--	--	*	
TERPINOLENE	Root	--	16.0	-1.0	*

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

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

TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-BYAKANGELICIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-HERACLENOL	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.

TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-ISOBYAKANGELICIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
TETRADECAN-1-AL	Root	--	--	*
TETRADECAN-1-OL-ACETATE	Root	--	--	*
TETRADECANAL	Root	--	2.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TETRADECANE	Root	--	2.0	*
THUJOPSENE	Root	--	--	*
<b>Activities (2)</b>				
Fumigant Pesticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
TIGLIC-ACID	Plant	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
<b>Activities (1)</b>				
Perfumery	Merck 11th Edition			
TRANS-1(7),5-P-MENTHADIEN-2-YL-ACETATE	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
TRANS-1-ETHOXY-2-P-MENTHENE	Root	--	6.0	*
TRANS-3-ETHOXY-1-P-MENTHANE	Root	--	4.0	*
TRANS-4-ETHOXY-2-PINENE	Root	--	79.0	*
TRANS-4-ETHOXY-PIN-2-ENE	Root Essent. Oil	--	--	*
TRANS-4-ETHOXY-THUJANE	Root	--	10.0	*
TRANS-4-ETHOXY-THUJANE	Root Essent. Oil	--	--	*
TRANS-6-NITRO-1(7),2-P-MENTHADIENE	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
TRANS-ANETHOLE	Root	2.0	13.0	*
<b>Activities (8)</b>				
Analgesic 10-100 ug/ml				
Anesthetic 10-100 ug/ml				
Antigenotoxic 40-400 mg/kg orl mus				
Antioxidant				
Antiradicular				
Calcium-Antagonist IC50=75.2 uM gpg (weak activity)				
FLavor FEMA 1,250-3,150	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry			
Sweetener 13 x sucrose				
TRANS-BETA-FARNESENE	Root	2.0	10.0	*
<b>Activities (2)</b>				
Insectifuge Pesticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.			
TRANS-CARVEOL	Root	--	11.0	*
<b>Activities (1)</b>				
Antiasthmatic				
TRANS-CARVEOL	Root Essent. Oil	--	--	*
<b>Activities (1)</b>				
Antiasthmatic				
TRANS-CARVEOL-ACETATE	Root Essent. Oil	--	--	*

TRANS-CARVYL-ACETATE	Root	2.0	5.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-OCIMENE	Root Essent. Oil	--	--	*
TRANS-OCIMENE	Root	10.0	268.0	*
TRANS-P-MENTH-2-EN-1-OL	Root	--	25.0	*
TRANS-PINOCARVEOL-ACETATE	Root Essent. Oil	--	--	*
TRANS-PINOCARVYL-ACETATE	Root	5.0	17.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-PIPERITOL	Root	--	30.0	*
TRANS-PIPERITOL	Root Essent. Oil	--	--	*
TRANS-SABINENE-HYDRATE	Root	--	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-SABINENE-HYDRATE	Root Essent. Oil	--	--	*
TRANS-VERBENOL	Root	20.0	64.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-VERBENOL	Root Essent. Oil	--	--	*
TRANS-VERBENOL-ACETATE	Root Essent. Oil	--	--	*
TRANS-VERBENOL-ISOVALERATE	Root Essent. Oil	--	--	*
TRANS-VERBENYL-2-METHYL-BUTYRATE	Root	1.0	4.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-VERBENYL-ACETATE	Root	15.0	46.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRANS-VERBENYL-ISOVALERATE	Root	6.0	17.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
TRIDECAN-1-OL	Root	--	--	*
TRIDECANOIC-ACID	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.

#### Activities (2)

Antioxidant IC85=60

Perfumery

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

TRIDECANOLIDE	Root Essent. Oil	--	--	*
TRIDECANOLIDE	Root	15.0	45.0	*
TRYPTOPHAN	Leaf	--	--	*

**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 Leaf -- -- \*

**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).

UMBELLIFEREN Plant -- -- Pakistan Encyclopedia Planta Medica. 1986.

UMBELLIFERONE Fruit -- -- \*

**Activities (22)**

Aldose-Reductase-Inhibitor IC50=4.8 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemic IC94=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.
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antihistaminic	
Antiinflammatory	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiprostaglandin	
Antiseptic	
Antispasmodic	
Antistaphylococcic	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Candidicide	
Choleretic	
Fungicide	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.
Lipoxygenase-Inhibitor	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Photoactive	
Sunscreen	Merck 11th Edition
Xanthine-Oxidase-Inhibitor	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.

**UMBELLIFERONE**

Plant

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Pakistan Encyclopedia Planta Medica. 1986.

**Activities (22)**

Aldose-Reductase-Inhibitor IC50=4.8 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemic IC94=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.
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antihistaminic	
Antiinflammatory	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiprostaglandin	
Antiseptic	
Antispasmodic	
Antistaphylococcic	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Candidicide	
Choleretic	
Fungicide	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.
Lipoxygenase-Inhibitor	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Photoactive	
Sunscreen	Merck 11th Edition
Xanthine-Oxidase-Inhibitor	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.

**UMBELLIFERONE**

Root

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200.0

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Activities (22)	
Aldose-Reductase-Inhibitor IC50=4.8 ug/ml cow	Okada,Y,et al.1995.Search for Naturally Occurring Substances to Prevent the Complications of Diabetes.II.Inhibitory Effect of Coumarin and Flavonoid Derivatives on Bovine Lens Aldose Reductase and Rabbit Platelet Aggregation.Chem Pharm Bull43(8):1385-1387
Allelochemic IC94=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.
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiedemic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antihistaminic	
Antiinflammatory	
Antimitotic 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antiprostaglandin	
Antiseptic	
Antispasmodic	
Antistaphylococcic	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.
Candidicide	
Choleretic	
Fungicide	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.
Lipoxygenase-Inhibitor	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Photoactive	
Sunscreen	Merck 11th Edition
Xanthine-Oxidase-Inhibitor	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livinston, Edinburgh.

UMBELLIFEROSE	Root	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
UMBELLIPRENIN	Root	--	--	*
UMBELLIPRENIN	Fruit	--	--	*
UMBELLIPRENIN	Seed	4.0	57.0	*
UNDEC-5-EN-3-YNE	Root	--	--	*
VALINE	Leaf	--	--	*

Activities (3)	
Antiencephalopathic Essential	Martindale's 29th
FLavor FEMA 1,000-2,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

VIOLAXANTHIN	Leaf	--	--	*
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Activities (2)	
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

VISNAGIN	Plant	--	--	Pakistan Encyclopedia Planta Medica. 1986.
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Activities (1)	
Vasodilator	Pakistan Encyclopedia Planta Medica. 1986.

XANTHOTOXIN	Root	--	--	*
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**Activities (43)**

Antiaflatoxin IC50=2.5 uM	
Antiaflatoxin 0.54 ppm	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antidermatitic	Martindale's 29th
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihistaminic	
Antiinflammatory 20 mg/man/day	
Antikeratotic	Martindale's 29th
Antileucodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antilymphomic 600 ug/kg +PUVA (extracorporeal)	
Antimitotic 5-25 ug/ml	
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antimycotic	Martindale's 29th
Antipityriasic	Martindale's 29th
Antipruritic	Martindale's 29th
Antipsoriac	Martindale's 29th
Antiscleromyxoedemic	Martindale's 29th
Antispasmodic	
Antitumor-Promoter IC24=50 ug/ml	
Antivitiliginic 20 mg/man/day	
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=551 uM gpg	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic ED50=7-29 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Breast) ED50=7.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=29.46 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Lung) ED50=28.99 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Emetic	
Fungicide IC85=1,000 ppm	
Fungicide IC100=2,000 ppm	
Fungistat EC50=21.6 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.
Hepatoprotective IC50=2.5 uM	
Hepatoprotective 0.5 ppm	
Herbicide	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.
Hypertrichotic	Martindale's 29th
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lipolytic	
Molluscicide	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	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

XANTHOTOXIN

Seed

2.0

1900.0

-1.0

\*

**Activities (43)**

Antiaflatoxin IC50=2.5 uM	
Antiaflatoxin 0.54 ppm	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antidermatitic	Martindale's 29th
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihistaminic	
Antiinflammatory 20 mg/man/day	
Antikeratotic	Martindale's 29th
Antileucodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antilymphomic 600 ug/kg +PUVA (extracorporeal)	
Antimitotic 5-25 ug/ml	
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antimycotic	Martindale's 29th
Antipityriasic	Martindale's 29th
Antipruritic	Martindale's 29th
Antipsoriac	Martindale's 29th
Antiscleromyxoedemic	Martindale's 29th
Antispasmodic	
Antitumor-Promoter IC24=50 ug/ml	
Antivitiliginic 20 mg/man/day	
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=551 uM gpg	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic ED50=7-29 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Breast) ED50=7.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=29.46 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Lung) ED50=28.99 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Emetic	
Fungicide IC85=1,000 ppm	
Fungicide IC100=2,000 ppm	
Fungistat EC50=21.6 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.
Hepatoprotective IC50=2.5 uM	
Hepatoprotective 0.5 ppm	
Herbicide	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Hypertrichotic	Martindale's 29th
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lipolytic	
Molluscicide	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	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

XANTHOTOXIN

Shoot

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**Activities (43)**

Antiaflatoxin IC50=2.5 uM	
Antiaflatoxin 0.54 ppm	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antidermatitic	Martindale's 29th
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihistaminic	
Antiinflammatory 20 mg/man/day	
Antikeratotic	Martindale's 29th
Antileucodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antilymphomic 600 ug/kg +PUVA (extracorporeal)	
Antimitotic 5-25 ug/ml	
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antimycotic	Martindale's 29th
Antipityriasic	Martindale's 29th
Antipruritic	Martindale's 29th
Antipsoriac	Martindale's 29th
Antiscleromyxoedemic	Martindale's 29th
Antispasmodic	
Antitumor-Promoter IC24=50 ug/ml	
Antivittilic 20 mg/man/day	
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=551 uM gpg	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic ED50=7-29 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Breast) ED50=7.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=29.46 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Lung) ED50=28.99 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Emetic	
Fungicide IC85=1,000 ppm	
Fungicide IC100=2,000 ppm	
Fungistat EC50=21.6 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.
Hepatoprotective IC50=2.5 uM	
Hepatoprotective 0.5 ppm	
Herbicide	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Hypertrichotic	Martindale's 29th
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lipolytic	
Molluscicide	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	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

XANTHOTOXIN

Plant

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**Activities (43)**

Antiaflatoxin IC50=2.5 uM	
Antiaflatoxin 0.54 ppm	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antidermatitic	Martindale's 29th
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihistaminic	
Antiinflammatory 20 mg/man/day	
Antikeratotic	Martindale's 29th
Antileucodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antilymphomic 600 ug/kg +PUVA (extracorporeal)	
Antimitotic 5-25 ug/ml	
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antimycotic	Martindale's 29th
Antipityriasic	Martindale's 29th
Antipruritic	Martindale's 29th
Antipsoriac	Martindale's 29th
Antiscleromyxoedemic	Martindale's 29th
Antispasmodic	
Antitumor-Promoter IC24=50 ug/ml	
Antivitiliginic 20 mg/man/day	
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=551 uM gpg	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic ED50=7-29 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Breast) ED50=7.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=29.46 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Lung) ED50=28.99 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Emetic	
Fungicide IC85=1,000 ppm	
Fungicide IC100=2,000 ppm	
Fungistat EC50=21.6 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.
Hepatoprotective IC50=2.5 uM	
Hepatoprotective 0.5 ppm	
Herbicide	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices &amp; Medicinal Plants: Recent Advances in Botany, Horticulture, &amp; Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Hypertrichotic	Martindale's 29th
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lipolytic	
Molluscicide	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	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

XANTHOTOXIN

Fruit

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42.0

1.0

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**Activities (43)**

Antiaflatoxin IC50=2.5 uM	
Antiaflatoxin 0.54 ppm	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antidermatitic	Martindale's 29th
Antifeedant	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antihistaminic	
Antiinflammatory 20 mg/man/day	
Antikeratotic	Martindale's 29th
Antileucodermic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Antilymphomic 600 ug/kg +PUVA (extracorporeal)	
Antimitotic 5-25 ug/ml	
Antimutagenic	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Antimycotic	Martindale's 29th
Antipityriasic	Martindale's 29th
Antipruritic	Martindale's 29th
Antipsoriac	Martindale's 29th
Antiscleromyxoedemic	Martindale's 29th
Antispasmodic	
Antitumor-Promoter IC24=50 ug/ml	
Antivitiliginic 20 mg/man/day	
Artemicide LC50=5.93 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Bufocide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Calcium-Antagonist IC50=551 uM gpg	
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic ED50=7-29 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Breast) ED50=7.21 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Colon) ED50=29.46 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Cytotoxic (Lung) ED50=28.99 ug/ml	Saqib, Q. N., Hui, Y. H., Anderson, J. E. and McLaughlin, J. L. 1990. Bioactive Furanocoumarins from the Berries of <i>Zanthoxylum americanum</i> . <i>Phytotherapy Research</i> 4(6): 216-219.
Dermatitigenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
Emetic	
Fungicide IC85=1,000 ppm	
Fungicide IC100=2,000 ppm	
Fungistat EC50=21.6 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.
Hepatoprotective IC50=2.5 uM	
Hepatoprotective 0.5 ppm	
Herbicide	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.
Hypertrichotic	Martindale's 29th
Insecticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Lipolytic	
Molluscicide	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	
Phytoalexin	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture.</i> Plenum Press, New York. 445 pp.
Piscicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

XANTHOTOXOL

Plant

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**Activities (5)**

Antihistaminic	Pakistan Encyclopedia <i>Planta Medica</i> . 1986.
Antimitotic 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Antinicotinic	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.
Cancer-Preventive 5-25 ug/ml	Gawron, A. and Glowinski, K. 1987. Cytostatic Activity of Coumarins in vitro. <i>Planta Medica</i> 1987: 526.
Cytotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.

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

**Activities (5)**

Antihistaminic                      Pakistan Encyclopedia Planta Medica. 1986.  
 Antimitotic 5-25 ug/ml                      Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.  
 Antinicotinic                      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.  
 Cancer-Preventive 5-25 ug/ml                      Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.  
 Cytotoxic                      Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

XANTHOTOXOL                      Fruit                      --                      --                      \*

**Activities (5)**

Antihistaminic                      Pakistan Encyclopedia Planta Medica. 1986.  
 Antimitotic 5-25 ug/ml                      Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.  
 Antinicotinic                      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.  
 Cancer-Preventive 5-25 ug/ml                      Gawron, A. and Glowniak, K. 1987. Cytostatic Activity of Coumarins in vitro. Planta Medica 1987: 526.  
 Cytotoxic                      Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

XANTHOXYLETIN                      Plant                      --                      --                      Pakistan Encyclopedia Planta Medica. 1986.

**Activities (1)**

Anticonvulsant

ZEAXANTHIN                      Leaf                      --                      --                      \*

**Activities (5)**

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

ZINGIBERENE                      Root                      --                      5.0                      -1.0                      \*

**Activities (6)**

Antirhinoviral                      Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingstone, Edinburgh.  
 Antiulcer IC54=100 mg/kg  
 Carminative  
 Insecticide                      Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.  
 Perfumery                      Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry  
 Pesticide

ZOZYMIN                      Plant                      --                      --                      Pakistan Encyclopedia Planta Medica. 1986.