

List of All Chemicals

P Mentha aquatica (Lamiaceae)

Common name(s)

Water Mint

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 <input type="button" value="All"/>	Low PPM	High PPM	StdDev	*Reference
(+)-ISOMENTHONE	Leaf	1230.0	3485.0	-0.08	*
(+)-MENTHOFURAN	Leaf	330.0	1445.0	1.41	*
(+)-NEOMENTHOL	Leaf	630.0	1785.0	0.48	*
(+)-NEOMENTHYL- ACETATE	Leaf	480.0	1360.0		*
(+)-PULEGONE	Leaf	--	1445.0	-0.67	*

Activities (4)

Antiacetylcholinesterase IC50=136 ug/ml
 Antiacetylcholinesterase IC50=0.9 mM
 Irritant ZEB
 Perfumery ZEB

(-)-LIMONENE	Leaf	210.0	595.0	-0.83	*
(-)-MENTHONE	Leaf	510.0	2805.0	-0.79	*

Activities (2)

Antiacetylcholinesterase IC39=164 ug/ml
 Antiacetylcholinesterase IC50=1.4 mM

1,8-CINEOLE	Shoot	--	115.0	-0.13	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (67)

(-)-Chronotropic 87 n/ml
 Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. *Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)*, 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

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Acaricide LC100=6 uM

Allelopathic

Allergenic

Anesthetic

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

Antiacetylcholinesterase
 IC50=41 ug/ml

Antiallergic
 J. Food Hyg. Soc. Jap. 33(6): 569.

Antibacterial 50 ppm

Antibronchitic

Anticariogenic

Anticatarrh
 Martindale's 29th

Anticholinesterase
 IC50=50-70

Antifatigue

Antihalitotic
 American Health, 12(4): 17, 1993.

Antiinflammatory

Antilarvnaic

Antinociceptive	
Antipharyngitic	
Antiplateau	
Antirheumatic	
Antirhinitic	
Antiseptic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antisinusitic	
Antispasmodic	
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Antitussive	
Antiulcer	
CNS-Stimulant	
Candidicide	
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Choleretic	
Convulsant	
Counterirritant	Martindale's 29th
Cytochrome-P450-Inducer	
Decongestant	
Degranulant 0.3 ul/ml	
Dentifrice	Martindale's 29th
Edemagenic inj	
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Fungicide	
Gastroprotective	
Gram(+)-icide	
Gram(-)-icide	
Hepatotoxic	
Herbicide IC50=78 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.
Hypotensive	
Inflammatory inj	
Insectifuge	
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	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Neurotoxic	
P450-Inducer	
Pediculicide 2.3 x pyrethrin	
Perfume	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Rubefacient	Martindale's 29th
Secretagogue	
Sedative	
Spasmogenic	
Surfactant	
Testosterone-Hydroxylase-Inducer	
Transdermal	
Trichomonicide LD100=1,000 ug/ml	

1,8-CINEOLE Shoot -- 140.0 -0.13 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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Anticholinesterase IC50=50-70	
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Antihalitosis	American Health, 12(4): 17, 1993.
Antiinflammatory	
Antilaryngitic	
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Antipharyngitic	
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Allergenic

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Anticatarrh Martindale's 29th

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Antihalitosis American Health, 12(4): 17, 1993.

Antiinflammatory

Antilaryngitic

Antinociceptive

Antipharyngitic

Antiplatelet

Antirheumatic

Antirhinic

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

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1,8-CINEOLE Leaf 300.0 850.0 -0.42 *

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Antihalitosis	American Health, 12(4): 17, 1993.
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1-OCTEN-3-OL	Shoot	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
1-OCTEN-3-OL	Shoot	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
1-OCTEN-3-OL	Shoot	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

1-OCTEN-3-OL	Shoot	--	2.0	-0.64	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTEN-3-OL	Shoot	--	0.1	-0.65	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTYL-3-YL-ACETATE	Shoot	--	2.0	-0.46	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTYL-3-YL-ACETATE	Shoot	--	3.0	-0.44	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTYL-3-YL-ACETATE	Shoot	--	2.0	-0.46	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTYL-3-YL-ACETATE	Shoot	--	3.0	-0.44	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
1-OCTYL-3-YL-ACETATE	Shoot	--	3.0	-0.44	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2,4-DECADIENAL	Shoot	--	2.0	1.0	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2,4-DECADIENAL	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2,4-DECADIENAL	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2,4-DECADIENAL	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2,4-DECADIENAL	Shoot	--	0.1	-1.0	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2-N-AMYL-FURAN	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2-N-AMYL-FURAN	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2-N-AMYL-FURAN	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2-N-AMYL-FURAN	Shoot	--	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
2-N-AMYL-FURAN	Shoot	--	0.1	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogekagaku Kaishi</i> 67(10): 1417-1419.
ACACETIN	Plant	--	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activities (16)					
Aldose-Reductase-Inhibitor					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Allergenic					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiaflatoxin IC50=7.25 uM					
Antiaflatoxin IC50=2.06 ppm					
Antiallergic					Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antihistaminic					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimalarial IC50=4.2-12.6 ug/ml					
Antimutagenic					Economic & Medicinal Plant Research, 6: 235.
Aromatase-Inhibitor IC12=1 uM/l					Journal of Medicinal Food 2: 235.1999.
Hepatoprotective IC50=7.25 uM					
Hepatoprotective IC50=2.06 ppm					
Iodothyronine-Deiodinase-Inhibitor					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Mutagenic					
Plasmodicide IC50=4.2-12.6 ug/ml					
Protisticide IC50=4.2-12.6 ug/ml					
Topoisomerase-I-Inhibitor					Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.

ACACETIN-7-RUTINOSIDE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
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ACETONE	Leaf	--	--		Jim Duke's personal files.
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Activities (3)					
Allergenic					
CNS-Depressant					Martindale's 29th
Narcotic					Martindale's 29th

ALLO-AROMADENDRENE	Shoot	--	1.0	-0.19	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALLO-AROMADENDRENE	Shoot	--	3.0	-0.18	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALLO-AROMADENDRENE	Shoot	--	2.0	-0.18	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALLO-AROMADENDRENE	Shoot	--	16.0	-0.17	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALLO-AROMADENDRENE	Shoot	--	1.0	-0.19	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-COPAENE	Shoot	--	2.0	-0.32	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-COPAENE	Shoot	--	2.0	-0.32	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-COPAENE	Shoot	--	2.0	-0.32	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-COPAENE	Shoot	--	2.0	-0.32	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-COPAENE	Shoot	--	2.0	-0.32	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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ALPHA-EUDESOL	Shoot	--	7.0	-0.35	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-EUDESOL	Shoot	--	11.0	0.1	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-EUDESOL	Shoot	--	24.0	1.55	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-EUDESOL	Shoot	--	22.0	1.33	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-EUDESOL	Shoot	--	7.0	-0.35	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-GURJUNENE	Shoot	--	8.0	-0.85	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-GURJUNENE	Shoot	--	12.0	-0.76	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-GURJUNENE	Shoot	--	10.0	-0.8	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-GURJUNENE	Shoot	--	4.0	-0.94	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-GURJUNENE	Shoot	--	4.0	-0.94	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ALPHA-PINENE	Shoot	--	8.0	-0.15	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

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	Shoot	--	13.0	-0.15	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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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
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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.
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Pesticide	
Sedative	Lawrence Review of Natural Products, Jun-90.
Spasmogenic	
Tranquilizer	Lawrence Review of Natural Products, Jun-90.
Transdermal	

ALPHA-PINENE

Shoot --

14.0

-0.15

Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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

Shoot --

9.0

-0.15

Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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Allergenic	
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Insectifuge 50 ppm	
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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.
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	Shoot	--	8.0	-0.15	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (28)

Allelochemic	
Allergenic	
Antiacne	
Antibacterial	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
Antiinflammatory 500 mg/kg	
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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 Leaf 18.0 68.0 -0.22 *

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.
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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	

Activities (101)**11B-HSD-Inhibitor**

AntiADD

AntiHIV IC72=200 ug/ml

AntiHIV IC50=143 ug/ml

Antiaflatoxin IC50=9.52
uMAntiaflatoxin IC50=2.57
ppm

Antiaggregant

Antiaging

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

Antiangiogenic 4 uM

Antiarrhythmic

Antibacterial Recio, M. C., Rios, J. L., and Villar, A., A review of some antimicrobial compounds isolated from medicinal plants reported in the literature 1978-1988, *Phytotherapy Research*, 3(4), 1989, 117-125.

Anticancer (Lung)

Anticomplementary

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

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

Antiherpetic 20-54 ug/ml

Antihistaminic IC50=10-
35 uM

Antiinflammatory #NAME?

Antiinflammatory
IC~65=1,000 uM

Antileukemic 20-50 uM

Antimelanomic 1-50 uM

Antimetastatic 1-50 uM

Antimutagenic ID50=10-
40 nM Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.Antimutagenic ID50=0.55
ug/ml

Antioxidant 1.5 x Vit. E

Antioxidant IC28.5=62.5
ug/ml

Antiperistaltic

Antiproliferant 1-50 uM

Antiproliferant IC50=155
uMAntispasmodic EC50=1-5
uM

Antistress 10 mg/kg

Antithyroid Jim Duke's personal files.

Antitumor 1-50 uM

Antitumor (Breast) 1-50
uM

Antitumor (Lung)

Antitumor (Skin)

Antiviral 20-54 ug/ml

Anxiolytic 10 mg/kg

Apoptotic 12-60 uM

Aromatase-Inhibitor Journal of Medicinal Food 2: 235.1999.
IC65=1 uM/lBeta-Glucuronidase-
Inhibitor IC50=~40 uM

CNS-Depressant

COX-1-Inhibitor
IC65=1,000 uMCOX-2-Inhibitor
IC>65=1,000 uM

COX-2-Inhibitor <40 uM

COX-2-Inhibitor IC50=<15
uM

Calcium-Antagonist? Biochimica & Biophysica Acta, 1115: 69, 1991.

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

Choleretic

Cyclooxygenase-Inhibitor

Cytochrome-P450-1A1-
Inhibitor

Cytotoxic IC88=10 ug/ml Planta Medica, 57: A113, 1991.

Cytotoxic 1-50 uM

Cytotoxic IC50=9.5 uM

DNA-Protective	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator MIC=30 uM	
Differentiator IC40=40 uM	
Diuretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Estrogenic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
Estrogenic 16% genistein	
Estrogenic EC50=1 uM	
HIF-1alpha-Inhibitor	
Hyaluronidase-Inhibitor IC50+=50-250 uM	
Hypotensive	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
ICAM-1-Inhibitor	
IKK-Inhibitor	
Inotropic	
Interleukin-6-Inhibitor	
MAO-Inhibitor	
MAPK-Inhibitor	
Musculotropic	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Mutagenic	
Myorelaxant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
NADH-Oxidase-Inhibitor	
NF-kB-Inhibitor	
NO-Synthase-Inhibitor 5-50 uM	
Nodulation-Signal	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Ornithine-Decarboxylase-Inhibitor	
P21-Inducer 10-70 uM	
PKC-Inhibitor IC50=10 uM	
PTK-Inhibitor 10-100 uM	
Pesticide	
Polyamine-Synthesis-Inhibitor	
Progestational	
Protein-Kinase-C-Inhibitor IC50=10-40 uM	
Quinone-Reductase-Inducer 20 uM	Uda, Y., Price, K. R., Williamson, G., Rhodes, M. J. C. 1997. Induction of the Anticarcinogenic Marker Enzyme, Quinone Reductase, in Murine Hepatoma Cells In Vitro by Flavonoids. Cancer Lett., 120 (2): 213-216.
Radioprotective	
Sedative 30-100 mg/kg	
Sunscreen	
TNF-alpha-Inhibitor IC50=3.27 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.
Topoisomerase-II-Inhibitor 50 ug/ml	Azuma, Y., Onishi, Y., Sato, Y., Kizaki, H. 1995. Effects of Protein Tyrosine Kinase Inhibitors With Different Modes of Action on Topoisomerase Activity and Death of IL-2-Dependent CTLL-2-Cells. J Biochemistry, 118: 312-318.
Topoisomerase-II-Inhibitor IC28=18 uM	
Topoisomerase-II-Inhibitor IC45=180 uM	
Uterotrophic EC50=0.1-25 uM/l	Journal of Medicinal Food 2: 227.1999.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor 0.36 uM	
iNOS-Inhibitor IC50=<15 uM	

APIGENIN-7-BETA-D-GLUCOPYRANOSIDE Plant -- -- J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

APIGENIN-7-RUTINOSIDE Plant -- -- J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

BETA-CARYOPHYLLENE	Shoot	--	32.0	-0.35	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CARYOPHYLLENE	Leaf	70.0	850.0	0.08	*
BETA-CARYOPHYLLENE	Shoot	--	32.0	-0.35	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CARYOPHYLLENE	Shoot	--	75.0	-0.26	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CARYOPHYLLENE	Shoot	--	115.0	-0.18	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CARYOPHYLLENE	Shoot	--	75.0	-0.26	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CUBEENE	Shoot	--	4.0	-0.25	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CUBEENE	Shoot	--	2.0	-0.26	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CUBEENE	Shoot	--	8.0	-0.24	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CUBEENE	Shoot	--	9.0	-0.24	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CUBEENE	Shoot	--	4.0	-0.25	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CYCLOCITRAL	Shoot	--	--		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CYCLOCITRAL	Shoot	--	0.1	-0.71	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CYCLOCITRAL	Shoot	--	--		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CYCLOCITRAL	Shoot	--	--		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-CYCLOCITRAL	Shoot	--	--		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
BETA-ELEMENE	Shoot	--	29.0	-0.24	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

Activities (5)

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

BETA-ELEMENE	Shoot	--	55.0	-0.15	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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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 Shoot -- 65.0 -0.12 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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 Shoot -- 65.0 -0.12 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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 Shoot -- 29.0 -0.24 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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

BETA-EUDESOL Shoot -- 24.0 1.32 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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 <i>Atractylodes lancea</i> Rhizoma. <i>Chem. Pharm. Bull.</i> 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-EUDESOL Shoot -- 24.0 1.32 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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 <i>Atractylodis Lanceae</i> 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	Shoot	--	8.0	-0.33	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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 <i>Atractylodis Lanceae</i> 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	Shoot	--	13.0	0.19	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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 <i>Atractylodis Lanceae</i> 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	Shoot	--	27.0	1.62	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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	Shoot	--	6.0	-0.43	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BETA-FARNESENE	Shoot	--	11.0	-0.4	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BETA-FARNESENE	Shoot	--	17.0	-0.37	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BETA-FARNESENE	Shoot	--	16.0	-0.37	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BETA-FARNESENE	Shoot	--	6.0	-0.43	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BETA-MYRCENE	Shoot	--	37.0	-0.29	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (2)

Cancer-Preventive Perfumery Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. Merck 11th Edition

BETA-MYRCENE	Shoot	--	36.0	-0.29	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

Cancer-Preventive Perfumery Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. Merck 11th Edition

BETA-MYRCENE	Shoot	--	85.0	-0.19	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

Cancer-Preventive Perfumery Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. Merck 11th Edition

BETA-MYRCENE	Shoot	--	12.0	-0.34	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

Cancer-Preventive Perfumery Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp. Merck 11th Edition

BETA-MYRCENE	Shoot	--	26.0	-0.31	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (2)

Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Perfumery	Merck 11th Edition

BETA-PINENE	Shoot	--	13.0	-0.12	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (13)

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

BETA-PINENE	Shoot	--	24.0	-0.12	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (13)

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

BETA-PINENE	Shoot	--	27.0	-0.12	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (13)

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

BETA-PINENE	Shoot	--	20.0	-0.12	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (13)

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

BETA-PINENE	Shoot	--	13.0	-0.12	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (13)

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

BETA-PINENE	Leaf	15.0	315.0	0.04	*
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Activities (13)

Allergenic	
Antiinflammatory	
Antiseptic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antispasmodic	
Candidicide	
Flavor FEMA 15-600	Aloe Research Council - Duke writeup of non-peer reviewed 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 reviewed 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	

BICYCLOGERMACRENE	Shoot	--	5.0	-0.85	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BICYCLOGERMACRENE	Shoot	--	7.0	-0.84	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BICYCLOGERMACRENE	Shoot	--	6.0	-0.85	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BICYCLOGERMACRENE	Shoot	--	2.0	-0.86	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BICYCLOGERMACRENE	Shoot	--	2.0	-0.86	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BOURBONENE	Shoot	--	6.0	0.07	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BOURBONENE	Shoot	--	5.0	-0.33	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BOURBONENE	Shoot	--	3.0	-1.11	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BOURBONENE	Shoot	--	4.0	-0.72	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
BOURBONENE	Shoot	--	6.0	0.07	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CAMPHENE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (9)

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

CAMPHENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (9)

Allelopathic Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.

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

Antioxidant Jim Duke's personal files.

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

FLavor FEMA 15-175 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

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

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

Pesticide

Spasmogenic Fitoterapia No.59-1984.

CAMPHENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (9)

Allelopathic Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.

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

Antioxidant Jim Duke's personal files.

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

FLavor FEMA 15-175 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

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

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

Pesticide

Spasmogenic Fitoterapia No.59-1984.

CAMPHENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (9)

Allelopathic Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.

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

Antioxidant Jim Duke's personal files.

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

FLavor FEMA 15-175 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

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

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

Pesticide

Spasmogenic Fitoterapia No.59-1984.

CAMPHENE Shoot -- 0.1 -0.13 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (9)

Allelopathic Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.

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

Antioxidant Jim Duke's personal files.

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

FLavor FEMA 15-175 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

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

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

Pesticide

Spasmogenic Fitoterapia No.59-1984.

Activities (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 reviewd book by Coats and draft by Henry
Fungistat	
Insecticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Sedative	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Trichomonicide LD100=300 ug/ml	
Vermicide	

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-
OXIDE Shoot -- 1.0 -0.4 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (8)

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 Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Antiinflammatory Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (*Lavandula latifolia* Vill.)2). *Chem. Pharm. Bull.* 38(8): 2283-2284, 1990.

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.

Calcium-Antagonist
ED50=32 uM gpg

Fungicide

Insecticide Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Pesticide

CARYOPHYLLENE-
OXIDE Shoot -- 3.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (8)

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 Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Antiinflammatory Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (*Lavandula latifolia* Vill.)2). *Chem. Pharm. Bull.* 38(8): 2283-2284, 1990.

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.

Calcium-Antagonist
ED50=32 uM gpg

Fungicide

Insecticide Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Pesticide

CARYOPHYLLENE-
OXIDE Shoot -- 3.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (8)

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 Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Antiinflammatory Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (*Lavandula latifolia* Vill.)2). *Chem. Pharm. Bull.* 38(8): 2283-2284, 1990.

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.

Calcium-Antagonist
ED50=32 uM gpg

Fungicide

Insecticide Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. *Insect Sci. Applic.* 14(1): 93-99, 1993.

Pesticide

CARYOPHYLLENE-
OXIDE Shoot -- 6.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (8)					
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	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.				
Antiinflammatory	Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990.				
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.				
Calcium-Antagonist ED50=32 uM gpg					
Fungicide					
Insecticide	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.				
Pesticide					

CARYOPHYLLENE- OXIDE	Shoot	--	1.0	-0.4	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (8)					
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	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.				
Antiinflammatory	Shimizu,*M., et al. 1990. Anti-inflammatory Constituents of Topically Applied Crude Drugs. IV.1) Constituents and Anti-inflammatory Effect of Paraguayan Crude Drug 'Alhucema' (Lavandula latifolia Vill.)2). Chem. Pharm. Bull. 38(8): 2283-2284, 1990.				
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.				
Calcium-Antagonist ED50=32 uM gpg					
Fungicide					
Insecticide	Bettarini, F., Borgonovi, G.E., et al. 1991. Antiparasitic Compounds from East African Plants: Isolation and Biological Activity of Anonaine, Matricarianol, Canthin-6-One and Caryophyllene Oxide. Insect Sci. Applic. 14(1): 93-99, 1993.				
Pesticide					

CINEOLE	Leaf	63.0	1904.0	-0.59	*
CIS-BETA-OCIMENE	Shoot	--	2.0	-0.54	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-BETA-OCIMENE	Shoot	--	5.0	-0.52	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-BETA-OCIMENE	Shoot	--	8.0	-0.5	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-BETA-OCIMENE	Shoot	--	8.0	-0.5	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-BETA-OCIMENE	Shoot	--	5.0	-0.52	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-JASMONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-JASMONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-JASMONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-JASMONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
CIS-JASMONE	Shoot	--	0.1	-1.5	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
ELEMOL	Shoot	--	220.0	0.9	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
ELEMOL	Shoot	--	70.0	-0.67	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
ELEMOL	Shoot	--	70.0	-0.67	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
ELEMOL	Leaf	660.0	1870.0	1.35	*	
Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
ELEMOL	Shoot	--	170.0	0.37	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
ELEMOL	Shoot	--	275.0	1.48	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
Activities (2)						
Antiacetylcholinesterase IC50=34 ug/ml						
Antiulcer						
EO	Shoot	--	1100.0	-0.85	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
EO	Shoot	--	1600.0	-0.8	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
EO	Shoot	--	1700.0	-0.8	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
EO	Shoot	--	1500.0	-0.81	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
EO	Shoot	--	1100.0	-0.85	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.	
EO	Leaf	3000.0	8500.0	-0.27	List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.	
ERIODICTYOL-7-BETA-D-GLUCOPYRANOSIDE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.	
ERIODICTYOL-7-RUTINOSIDE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.	
FORMIC-ACID	Leaf	--	--		Jim Duke's personal files.	

Activities (13)

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

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

Activities (6)

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

GAMMA-MUUROLENE Shoot -- 1.0 -0.37 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

GAMMA-MUUROLENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

GAMMA-MUUROLENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

GAMMA-MUUROLENE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

GAMMA-MUUROLENE Shoot -- 1.0 -0.37 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

GAMMA-TERPINENE Shoot -- 2.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (11)

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

GAMMA-TERPINENE Shoot -- 5.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

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

Antiacetylcholinesterase IC23=1.2 mM

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

Antioxidant Jim Duke's personal files.

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

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

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

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

Pesticide

GAMMA-TERPINENE Shoot -- 5.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

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

Antiacetylcholinesterase IC23=1.2 mM

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

Antioxidant Jim Duke's personal files.

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

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

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

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

Pesticide

GAMMA-TERPINENE Shoot -- 8.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

ACE-Inhibitor 100 ug/ml (weak activity)

Acaricide

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

Antiacetylcholinesterase IC23=1.2 mM

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

Antioxidant Jim Duke's personal files.

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

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

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

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

Pesticide

GAMMA-TERPINENE Shoot -- 2.0 -0.39 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)					
ACE-Inhibitor 100 ug/ml (weak activity)					
Acaricide					
Aldose-Reductase-Inhibitor 100 ug/ml					Okamura, K., Iwakami, S., Matsunaga, T. 1992. Biological Activity of Monoterpenes from Trees. Toyama-Ken Yakuji Kenkyusho Nenpo, (20): 95-101.
Antiacetylcholinesterase IC23=1.2 mM					
Antifeedant					Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Antioxidant					Jim Duke's personal files.
FLavor FEMA 1-40					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Insectifuge					Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant					Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Perfumery					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide					

GERMACRENE-D	Shoot	--	25.0	-0.36	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Shoot	--	25.0	-0.36	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Shoot	--	80.0	-0.33	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Leaf	70.0	595.0	-0.04	*
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Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Shoot	--	130.0	-0.3	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)					
Pesticide					
Pheromone					

GERMACRENE-D	Shoot	--	115.0	-0.31	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)					
Pesticide					
Pheromone					

HESPERETIN	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
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Activities (8)				
Antibacterial MIC=500 ug/ml				
Antifeedant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antilipolytic	Kuppusamy, U.R., and Das, N.P. 1993. Antilipolytic Action of Hesperetin in Rat Adipocytes. <i>Planta Medica</i> , 59: 508.			
Antiviral	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Fungistat	Weidenborner, M., Hindorf, H., Jha, H.C., and Tsofonos, P. 1989. Antifungal Activity of Flavonoids Against Storage Fungi of the Genus <i>Aspergillus</i> . <i>Phytochemistry</i> . 29(4): 1103-1105.			
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 253.			
Pesticide				

HESPERETIN-7-BETA-D-GLUCOPYRANOSIDE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
ISOAMYL-ISOVALERATE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ISOAMYL-ISOVALERATE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ISOAMYL-ISOVALERATE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ISOAMYL-ISOVALERATE	Shoot	--	0.1	-0.48	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
ISOMENTHONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

Activities (3)				
Antiacetylcholinesterase IC50=1.6 mM				
Antioxidant				
Antiradicular				

ISOMENTHONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (3)				
Antiacetylcholinesterase IC50=1.6 mM				
Antioxidant				
Antiradicular				

ISOMENTHONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (3)				
Antiacetylcholinesterase IC50=1.6 mM				
Antioxidant				
Antiradicular				

ISOMENTHONE	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (3)				
Antiacetylcholinesterase IC50=1.6 mM				
Antioxidant				
Antiradicular				

ISOMENTHONE	Shoot	--	0.1	-0.53	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (3)

Antiacetylcholinesterase IC50=1.6 mM
Antioxidant
Antiradicular

ISOMENTHONE	Leaf	30.0	170.0	-0.62	*
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Activities (3)

Antiacetylcholinesterase IC50=1.6 mM
Antioxidant
Antiradicular

LIMONENE	Shoot	--	60.0	-0.3	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (60)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 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, Oest. Biochem. & Physiol., 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. & Physiol.</i> , 23, 1985, 383-8.
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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.
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Antiseptic	
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Antitumor (Breast)	
Antitumor (Colon)	
Antitumor (Pancreas)	
Antitumor (Prostate)	
Antitumor (Stomach)	
Antiviral	
Apoptotic	
Bronchoprotectant	
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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)

LIMONENE	Shoot	--	60.0	-0.3	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Antibacterial	Revista Itiliana Eppos, 12: 5, 1994.
Anticancer	
Antiesophagitic	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
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Antilithic	
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Antitumor (Breast)	
Antitumor (Colon)	
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Enterocontractant	J. Aromatherapy 4: 22.
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Fungiphilic	J. Agric. Food Chem. 43: 2283.
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P450-Inducer	
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Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Transdermal	

LIMONENE Leaf 114.0 714.0 0.3 *

Activities (60)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
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Antibacterial	Revista Itiliana Eppos, 12: 5, 1994.
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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.
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Transdermal	

LIMONENE

Shoot --

60.0

-0.3

Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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Antiinflammatory	
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Cholesterolytic	
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Insecticide 0.37 uM/fly	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
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Myorelaxant 50 mg/kg	
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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	

LIMONENE	Shoot	--	75.0	-0.29	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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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. & Physiol.</i> , 23, 1985, 383-8.
Acaricide LC100=8 uM	
Allelochemic	
Allergenic 1/20th carene	
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Antiasthmatic	
Antibacterial	Revista Itiliana Eppos, 12: 5, 1994.
Anticancer	
Antiesophagitic	
Antifeedant	
Antiflu	Economic & Medicinal Plant Research, 5: 195.
Antiinflammatory	
Antilithic	
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Antimetastatic (Stomach)	
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Antiseptic	
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Antitumor (Prostate)	
Antitumor (Stomach)	
Antiviral	
Apoptotic	
Bronchoprotectant	
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Fungiphilic	J. Agric. Food Chem. 43: 2283.
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Pesticide	
Photosensitizer	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Sedative ED=1-32 mg/kg	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Transdermal	

LINALOL	Leaf	1080.0	3060.0	1.37	*
LINALOOL	Leaf	1080.0	3060.0	1.47	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

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	

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

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

Motor-Depressant Buchbauer et al. e.g. Buchbauer et al, 1993. Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi, R., Buttery, R.G. and Sugisawa, H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC

Perfumery Merck 11th Edition

Sedative

LUTEOLIN-7-BETA-D-
GLUCOPYRANOSIDE

Plant -- --

J.S. Glasby Dict. Pls Containing 2ndary Metabolite. 1991.

LUTEOLIN-7-
RUTINOSIDE

Plant -- --

J.S. Glasby Dict. Pls Containing 2ndary Metabolite. 1991.

MEHTHOFURAN

Shoot -- 85.0

Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

MELISSIC-ACID

Leaf -- --

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

MENTHOFURAN

Shoot -- 500.0 -0.35

Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.**Activities (5)**Calcium-Antagonist IC50=441 uM gpg (weak
activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

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

Pesticide

Pulmonotoxic De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

MENTHOFURAN

Shoot -- 395.0 -0.37

Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.**Activities (5)**Calcium-Antagonist IC50=441 uM gpg (weak
activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

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

Pesticide

Pulmonotoxic De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

MENTHOFURAN

Shoot -- 180.0 -0.41

Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.**Activities (5)**Calcium-Antagonist IC50=441 uM gpg (weak
activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

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

Pesticide

Pulmonotoxic De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

MENTHOFURAN

Shoot -- 42.0 -0.44

Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (5)

Calcium-Antagonist IC50=441 uM gpg (weak activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

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

Pesticide

Pulmonotoxic De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

MENTHOFURAN Leaf 30.0 7582.0 *

Activities (5)

Calcium-Antagonist IC50=441 uM gpg (weak activity)

Hepatotoxic Lawrence Review of Natural Products, Jan-92.

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

Pesticide

Pulmonotoxic De Smet, P.A.G.M., Keller, K., Hansel, R. and Chandler, R.F., eds. 1993. Adverse Effects of Herbal Drugs 2. Springer-Verlag, Berlin. 348pp.

MENTHOL Shoot -- 1.0 -0.64 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Noeikagaku Kaishi* 67(10): 1417-1419.**Activities (63)**

Allergenic Martindale's 29th

Analgesic Martindale's 28th

Anesthetic 2,000 ppm Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. *J. Pharm. Pharmacol.* 46: 14-18, 1994.

Antiacetylcholinesterase IC50=2.0 mM

Antiaggregant IC50=750

Antiallergic *J. Food Hyg. Soc. Jap.* 33(6): 569.Antiasthmatic Mills, Simon and Bone, Kerry. 2000. *Phytotherapy*. Churchill Livingstone, Edinburgh.

Antibacillus MIC=1.25 mg/ml

Antibacterial MIC=0.625-2.5

Antibronchitic Martindale's 28th

Antidandruff A.L.L. Hunting. *Encyclopedia of Shampoo Ingredients*. Micelle Press, Cranford NJ. 467 pp.

Antiescherichic MIC=1.25 mg/ml

Antihalitosis *American Health*, 12(4): 17, 1993.Antihistaminic *J. Food Hyg. Soc. Jap.* 33(6): 569.

Antiinflammatory Martindale's 28th

Antilisteria MIC=0.625 mg/ml

Antineuralgic

Antiodontalgic Martindale's 28th

Antipruritic Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. *J. Pharm. Pharmacol.* 46: 14-18, 1994.

Antipyretic

Antirheumatic Martindale's 28th

Antisalmonella MIC=0.625 mg/ml

Antiseptic 4 x phenol Wagner & Wolff, eds. 1977. *New Natural Products* (RS164. I56. 176)

Antisinusitic Martindale's 28th

Antispasmodic ED50=0.01 mg/ml *Fitoterapia* No.59-1984.

Antistaphylococcic MIC=0.625 mg/ml

Antistreptococcic MIC=0.4 mg/ml

Antitartar

Antivaginitic

Antivulvitic

Bradycardic 65 mg/3 x day/woman Martindale's 28th

Bronchomucolytic *Advance in Chinese Medicinal Materials Research*. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.Bronchomucotropic Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. *J. Pharm. Pharmacol.* 46: 14-18, 1994.Bronchorrhheic *Advance in Chinese Medicinal Materials Research*. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.

CNS-Depressant

CNS-Stimulant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Candidicide MIC=0.625 mg/ml	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Choleretic	
Ciliotoxic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Congestant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Convulsant	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. Anns. Intern. Med. 117(2):165-6; Huxtable, R.
Counterirritant	
Decongestant? 11 mg/man	Eccles, R., et al. 1989. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. J. Pharm. Pharmacol. 42: 652-654, 1990.
Dermatitigenic	
Diaphoretic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Enterorelaxant	J. Aromatherapy 4: 22.
Expectorant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Gastrosedative	Merck 11th Edition
Irritant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Myorelaxant	Martindale's 29th
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Neurodepressant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Neuropathogenic 40-100 mg/day/rat	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Nociceptive	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Perfumery	Merck 11th Edition
Pesticide	
Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Rubefacient	
Termiticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Transdermal	
Vibriocide	

MENTHOL	Shoot	--	--	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (63)

Allergenic	Martindale's 29th
Analgesic	Martindale's 28th
Anesthetic 2,000 ppm	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Antiacetylcholinesterase IC50=2.0 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antiasthmatic	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.
Antibacillus MIC=1.25 mg/ml	
Antibacterial MIC=0.625-2.5	
Antibronchitic	Martindale's 28th
Antidandruff	A.L.L. Hunting. Encyclopedia of Shampoo Ingredients. Micelle Press, Cranford NJ. 467 pp.
Antiescherichic MIC=1.25 mg/ml	
Antihalitosis	American Health, 12(4): 17, 1993.
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antiinflammatory	Martindale's 28th
Antilisteria MIC=0.625 mg/ml	
Antineuralgic	
Antiodontalgic	Martindale's 28th
Antipruritic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Antipyretic	
Antirheumatic	Martindale's 28th
Antisalmonella MIC=0.625 mg/ml	

Antiseptic 4 x phenol	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Antisinusitic	Martindale's 28th
Antispasmodic ED50=0.01 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625 mg/ml	
Antistreptococcic MIC=0.4 mg/ml	
Antitartar	
Antivaginitic	
Antivulvitic	
Bradycardic 65 mg/3 x day/woman	Martindale's 28th
Bronchomucolytic	<i>Advance in Chinese Medicinal Materials Research</i> . 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
Bronchomucotropic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Bronchorrhic	<i>Advance in Chinese Medicinal Materials Research</i> . 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
CNS-Depressant	
CNS-Stimulant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Candidicide MIC=0.625 mg/ml	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Choleretic	
Ciliotoxic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Congestant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Convulsant	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Ann. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Counterirritant	
Decongestant? 11 mg/man	Eccles, R., et al. 1989. The effects of oral administration of (-)-menthol on nasal resistance to airflow and nasal sensation of airflow in subjects suffering from nasal congestion associated with the common cold. <i>J. Pharm. Pharmacol.</i> 42: 652-654, 1990.
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Enterorelaxant	<i>J. Aromatherapy</i> 4: 22.
Expectorant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Gastrosedative	Merck 11th Edition
Irritant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Myorelaxant	Martindale's 29th
Nematicide MLC=1 mg/ml	<i>Shoyakugaku Zasshi</i> , 44: 183.
Neurodepressant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Neuropathogenic 40-100 mg/day/rat	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Nociceptive	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Perfumery	Merck 11th Edition
Pesticide	
Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Rubefacient	
Termiticide	Jacobson, M., <i>Glossary of Plant-Derived Insect Deterrents</i> , CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Transdermal	
Vibriocide	

MENTHOL	Shoot	--	3.0	-0.64	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (63)

Allergenic	Martindale's 29th
Analgesic	Martindale's 28th
Anesthetic 2,000 ppm	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Antiacetylcholinesterase IC50=2.0 mM	
Antiaggregant IC50=750	
Antiallergic	<i>J. Food Hyg. Soc. Jap.</i> 33(6): 569.
Antiasthmatic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livingstone, Edinburgh.
Antibacillus MIC=1.25 mg/ml	

Antibacterial MIC=0.625-2.5	
Antibronchitic	Martindale's 28th
Antidandruff	A.L.L. Hunting. Encyclopedia of Shampoo Ingredients. Micelle Press, Cranford NJ. 467 pp.
Antiescherichic MIC=1.25 mg/ml	
Antihalitosis	American Health, 12(4): 17, 1993.
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antiinflammatory	Martindale's 28th
Antilisteria MIC=0.625 mg/ml	
Antineuralgic	
Antiodontalgic	Martindale's 28th
Antipruritic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Antipyretic	
Antirheumatic	Martindale's 28th
Antisalmonella MIC=0.625 mg/ml	
Antiseptic 4 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antisinusitic	Martindale's 28th
Antispasmodic ED50=0.01 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625 mg/ml	
Antistreptococcic MIC=0.4 mg/ml	
Antitartar	
Antivaginitic	
Antivulvitic	
Bradycardic 65 mg/3 x day/woman	Martindale's 28th
Bronchomucolytic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
Bronchomucotropic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Bronchorrhic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
CNS-Depressant	
CNS-Stimulant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Candidicide MIC=0.625 mg/ml	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Choleretic	
Ciliotoxic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
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Diaphoretic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Enterorelaxant	J. Aromatherapy 4: 22.
Expectorant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Gastrosedative	Merck 11th Edition
Irritant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
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Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Neurodepressant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
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Perfumery	Merck 11th Edition
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Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
Rubefacient	
Termiticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Transdermal	

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Allergenic	Martindale's 29th
Analgesic	Martindale's 28th
Anesthetic 2,000 ppm	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Antiacetylcholinesterase IC ₅₀ =2.0 mM	
Antiaggregant IC ₅₀ =750	
Antiallergic	<i>J. Food Hyg. Soc. Jap.</i> 33(6): 569.
Antiasthmatic	Mills, Simon and Bone, Kerry. 2000. <i>Phytotherapy</i> . Churchill Livinston, Edinburgh.
Antibacillus MIC=1.25 mg/ml	
Antibacterial MIC=0.625-2.5	
Antibronchitic	Martindale's 28th
Antidandruff	A.L.L. Hunting. <i>Encyclopedia of Shampoo Ingredients</i> . Micelle Press, Cranford NJ. 467 pp.
Antiescherichic MIC=1.25 mg/ml	
Antihalitotic	<i>American Health</i> , 12(4): 17, 1993.
Antihistaminic	<i>J. Food Hyg. Soc. Jap.</i> 33(6): 569.
Antiinflammatory	Martindale's 28th
Antilisteria MIC=0.625 mg/ml	
Antineuralgic	
Antiodontalgic	Martindale's 28th
Antipruritic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Antipyretic	
Antirheumatic	Martindale's 28th
Antisalmonella MIC=0.625 mg/ml	
Antiseptic 4 x phenol	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Antisinusitic	Martindale's 28th
Antispasmodic ED ₅₀ =0.01 mg/ml	<i>Fitoterapia</i> No.59-1984.
Antistaphylococcic MIC=0.625 mg/ml	
Antistreptococcic MIC=0.4 mg/ml	
Antitartar	
Antivaginitic	
Antivulvitic	
Bradycardic 65 mg/3 x day/woman	Martindale's 28th
Bronchomucolytic	<i>Advance in Chinese Medicinal Materials Research</i> . 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
Bronchomucotropic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
Bronchorrhic	<i>Advance in Chinese Medicinal Materials Research</i> . 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 200.
CNS-Depressant	
CNS-Stimulant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Candidicide MIC=0.625 mg/ml	
Carminative	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
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Ciliotoxic	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. <i>J. Pharm. Pharmacol.</i> 46: 14-18, 1994.
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Convulsant	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. <i>This and That: The Essential Pharmacology of Herbs and Spices</i> . <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. <i>The Myth of Benificent Nature. The Risk of Herbal Preparations</i> . <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
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Perfumery	Merck 11th Edition
Pesticide	
Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
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Transdermal	
Vibriocide	

MENTHOL Shoot -- 1.0 -0.64 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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Antivulvitic	
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Perfumery	Merck 11th Edition
Pesticide	
Refrigerant	Yamamoto, A., Umemori, S., and Muranishi, S. 1993. Absorption Enhancement of Intrapulmonary Administered Insulin by Various Absorption Enhancers and Protease Inhibitors in Rats. J. Pharm. Pharmacol. 46: 14-18, 1994.
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Termiticide	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Transdermal	
Vibriocide	

MENTHOL Leaf -- 3570.0 -0.19 *

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Activities (30)

Acaricide	
Allelopathic	
Analgesic	
Antiacetylcholinesterase IC50=1.4 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacillary MIC=1.25 mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHONE Leaf 23.0 212.0 -0.61 *

Activities (30)

Acaricide	
Allelopathic	
Analgesic	
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Antiaggregant IC50=750	
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Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHONE	Shoot	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (30)

Acaricide	
Allelopathic	
Analgesic	
Antiacetylcholinesterase IC50=1.4 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacillary MIC=1.25 mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHONE	Shoot	--	--	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (30)

Acaricide

Allelopathic

Analgesic

Antiacetylcholinesterase
IC50=1.4 mM

Antiaggregant
IC50=750

Antiallergic J. Food Hyg. Soc. Jap. 33(6): 569.

Antibacillary MIC=1.25 mg/ml

Antibacterial
MIC=0.625-5 mg/ml

Antiescherichic MIC=5 mg/ml

Antihistaminic J. Food Hyg. Soc. Jap. 33(6): 569.

Antilisteria MIC=1.25 mg/ml

Antisalmonella MIC=5 mg/ml

Antiseptic 2.25 x phenol Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

Antispasmodic ED50=0.044 mg/ml Fitoterapia No.59-1984.

Antistaphylococcic
MIC=0.625-2.5 mg/ml

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

Candidicide MIC=2.5 mg/ml

Cerebrotoxic orl man J. Aromatherapy 4: 24.

Culicide LC50=156-194 mg/l

FLavor FEMA 5-50 Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry

Fungicide

Insecticide LC50=156-194 mg/l

Larvicide LC50=156-194 mg/l

Mutagenic

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

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

Pesticide

Psychoactive

Sedative Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of *Calamintha sylvatica* subsp. *Ascendens*. *Journal of Ethnopharmacology*, 25: 165-171, 1989.

Trichomonicide
LD100=600 ug/ml

MENTHONE Shoot -- 2.0 -0.82 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (30)

Acaricide	
Allelopathic	
Analgesic	
Antiacetylcholinesterase IC50=1.4 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacillary MIC=1.25 mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHONE	Shoot	--	--	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (30)

Acaricide	
Allelopathic	
Analgesic	
Antiacetylcholinesterase IC50=1.4 mM	
Antiaggregant IC50=750	
Antiallergic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antibacillary MIC=1.25 mg/ml	
Antibacterial MIC=0.625-5 mg/ml	
Antiescherichic MIC=5 mg/ml	
Antihistaminic	J. Food Hyg. Soc. Jap. 33(6): 569.
Antilisteria MIC=1.25 mg/ml	
Antisalmonella MIC=5 mg/ml	
Antiseptic 2.25 x phenol	Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Antispasmodic ED50=0.044 mg/ml	Fitoterapia No.59-1984.
Antistaphylococcic MIC=0.625-2.5 mg/ml	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=2.5 mg/ml	
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Culicide LC50=156-194 mg/l	
FLavor FEMA 5-50	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insecticide LC50=156- 194 mg/l	
Larvicide LC50=156-194 mg/l	
Mutagenic	
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Pesticide	
Psychoactive	
Sedative	Ortiz de Urbina, A.V., Martin*, M.L., Montero, M.J., Moran, A., and San Roman, L. 1988. Sedating and Antipyretic Activity of the Essential Oil of Calamintha sylvatica subsp. Ascendens. Journal of Ethnopharmacology, 25: 165-171, 1989.
Trichomonicide LD100=600 ug/ml	

MENTHYL-ACETATE Leaf -- 1900.0 -1.0 *

Activities (2)

Antispasmodic ED50=0.105 mg/ml	Fitoterapia No.59-1984.
Perfumery	Merck 11th Edition

MENTHYL-ACETATE Shoot -- 6.0 -0.49 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (2)

Antispasmodic ED50=0.105 mg/ml	Fitoterapia No.59-1984.
Perfumery	Merck 11th Edition

MENTHYL-ACETATE Shoot -- 2.0 -0.68 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (2)

Antispasmodic ED50=0.105 mg/ml	Fitoterapia No.59-1984.
Perfumery	Merck 11th Edition

MENTHYL-ACETATE Shoot -- 2.0 -0.68 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (2)					
Antispasmodic ED50=0.105 mg/ml			Fitoterapia No.59-1984.		
Perfumery			Merck 11th Edition		
MENTHYL-ACETATE	Shoot	--	6.0	-0.49	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
Activities (2)					
Antispasmodic ED50=0.105 mg/ml			Fitoterapia No.59-1984.		
Perfumery			Merck 11th Edition		
MENTHYL-VALERATE	Leaf	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Activities (1)					
Sedative			Merck 11th Edition		
METHYL-ACETATE	Shoot	--	16.0	1.0	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
Activities (3)					
FLavor FEMA 1-30	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				
Trypsin-Enhancer	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.				
MYRCENE	Leaf	--	--		Jim Duke's personal files.
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. <i>Toyama-Ken Yakuji Kenkyusho Nenpo</i> , (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. <i>Environmental and Molecular Mutagenesis</i> 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. <i>Environmental and Molecular Mutagenesis</i> 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. <i>J. Pharm. Pharmacol.</i> 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. <i>J. Pharm. Pharmacol.</i> 42: 877-878, 1990.				
Antioxidant					
Antispasmodic					
Chemopreventive					
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. <i>Toxicology of Plant and Fungal Compounds</i> . (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. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . 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. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.				
Pesticide					
MYRTENYL-METHYL-ETHER	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
MYRTENYL-METHYL-ETHER	Shoot	--	2.0	-0.99	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

MYRTENYL-METHYL-ETHER	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
MYRTENYL-METHYL-ETHER	Shoot	--	0.1	-1.01	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
MYRTENYL-METHYL-ETHER	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
N-HEXANAL	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
N-HEXANAL	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
N-HEXANAL	Shoot	--	2.0	1.0	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
N-HEXANAL	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
N-HEXANAL	Shoot	--	0.1	-1.0	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
NEOMENTHOL	Leaf	--	--		Jim Duke's personal files.

Activities (2)

Antispasmodic ED50=0.033 mg/ml	Fitoterapia No.59-1984.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

NEROLIDOL	Shoot	--	2.0	-0.4	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (11)

Aldose-Reductase-Inhibitor	
Allergenic	
Anti-acne	
Antibacterial MIC=25-200 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . <i>J. Agric. Food Chem.</i> 41: 1102-1105.
Anticariogenic MIC=25-200 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . <i>J. Agric. Food Chem.</i> 41: 1102-1105.
Antifeedant 1 mM (diet)	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.
Antistreptococic	
FLavor FEMA 1-10	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	

NEROLIDOL	Shoot	--	4.0	-0.4	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (11)

Aldose-Reductase-Inhibitor

Allergenic

Antiacne

Antibacterial MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticariogenic MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Antifeedant 1 mM (diet) Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Antistreptococcic

FLavor FEMA 1-10 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

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

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

Pesticide

NEROLIDOL Shoot -- 0.1 -0.41 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

Aldose-Reductase-Inhibitor

Allergenic

Antiacne

Antibacterial MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticariogenic MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Antifeedant 1 mM (diet) Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Antistreptococcic

FLavor FEMA 1-10 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

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

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

Pesticide

NEROLIDOL Shoot -- -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

Aldose-Reductase-Inhibitor

Allergenic

Antiacne

Antibacterial MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticariogenic MIC=25-200 ug/ml Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Antifeedant 1 mM (diet) Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.

Antistreptococcic

FLavor FEMA 1-10 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

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

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

Pesticide

NEROLIDOL Shoot -- 3.0 -0.4 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (11)

Aldose-Reductase-Inhibitor

Allergenic

Antiacne

Antibacterial MIC=25-200 ug/ml

Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Anticariogenic MIC=25-200 ug/ml

Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against Streptococcus mutans. J. Agric. Food Chem. 41: 1102-1105.

Antifeedant 1 mM (diet)

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

Antistreptococcic

FLavor FEMA 1-10

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

Nematicide MLC=1 mg/ml

Shoyakugaku Zasshi, 44: 183.

Perfumery

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

Pesticide

NONANOIC-ACID	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

FLavor FEMA 1-15

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

Perfumery

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

NONANOIC-ACID	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

FLavor FEMA 1-15

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

Perfumery

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

NONANOIC-ACID	Shoot	--	2.0	-0.48	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

FLavor FEMA 1-15

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Perfumery

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NONANOIC-ACID	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

FLavor FEMA 1-15

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

Perfumery

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

NONANOIC-ACID	Shoot	--	0.1	-0.61	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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Activities (2)

FLavor FEMA 1-15

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

Perfumery

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

OCTAN-3-OL	Leaf	3.0	162.0	-0.42	*
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OCTAN-3-OL-ACETATE	Leaf	--	--		Jim Duke's personal files.
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P-CYMENE	Shoot	--	2.0	-0.5	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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.
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	Shoot	--	2.0	-0.5	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Antiflu	
Antirheumatalgic	Martindale's 28th
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Antirheumatalgic	Martindale's 28th
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Trichomonicide LD100=50 ug/ml	

P-CYMENE Shoot -- 1.0 -0.5 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

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Trichomonicide LD100=50 ug/ml	

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Antibacterial	
Antiflu	
Antirheumatalgic	Martindale's 28th
Antiviral	
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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.
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Trichomonicide LD100=50 ug/ml	

P-CYMOL Leaf 6.0 51.0 -0.52 *

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

Activities (3)

Antiacetylcholinesterase IC50=110 ug/ml	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Toxic 10,000/man	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

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

Activities (7)

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	

PIPERITONE-OXIDE Leaf -- -- Jim Duke's personal files.

PULEGONE Shoot -- -- Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

Activities (28)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antiacetylcholinesterase IC50=0.9 mM	
Antiacetylcholinesterase IC50=136 ug/ml	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antibacterial	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Anticholinesterase	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antihistaminic	Ortiz De Urbina, A.V., Martin, M.L., Montero, M.J., Carron, R., Sevilla, M.A., San Roman, L. 1989. Antihistaminic activity of pulegone on the guinea-pig ileum. <i>J. Pharm. Pharmacol.</i> 42: 295-296, 1990.
Antipyretic	
Avifuge	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Encephalopathic 80 mg/kg orl rat	Lawrence Review of Natural Products, Jan-92.
FLavor FEMA 5-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Glutathionalytic	Lawrence Review of Natural Products, Jan-92.
Hallucinogenic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Hepatotoxic	Lewis, E.J. and Friedrich, E.C. 1989. The Essential Oil of <i>Poliomintha incana</i> . <i>Planta Medica</i> 56(2): 224-226, 1990.
Herbicide IC50=1.5 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	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Insectifuge	
Nephrotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

PULEGONE	Shoot	--	--	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Avifuge	
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Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

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Hepatotoxic	Lewis, E.J. and Friedrich, E.C. 1989. The Essential Oil of <i>Poliomintha incana</i> . <i>Planta Medica</i> 56(2): 224-226, 1990.
Herbicide IC50=1.5 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	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Insectifuge	
Nephrotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

PULEGONE	Shoot	--	--	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (28)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antiacetylcholinesterase IC50=0.9 mM	
Antiacetylcholinesterase IC50=136 ug/ml	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antibacterial	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Anticholinesterase	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antihistaminic	Ortiz De Urbina, A.V., Martin, M.L., Montero, M.J., Carron, R., Sevilla, M.A., San Roman, L. 1989. Antihistaminic activity of pulegone on the guinea-pig ileum. <i>J. Pharm. Pharmacol.</i> 42: 295-296, 1990.
Antipyretic	
Avifuge	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Cerebrotoxic orl man	J. Aromatherapy 4: 24.
Encephalopathic 80 mg/kg orl rat	Lawrence Review of Natural Products, Jan-92.
FLavor FEMA 5-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Glutathionalytic	Lawrence Review of Natural Products, Jan-92.
Hallucinogenic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Hepatotoxic	Lewis, E.J. and Friedrich, E.C. 1989. The Essential Oil of <i>Poliomintha incana</i> . <i>Planta Medica</i> 56(2): 224-226, 1990.
Herbicide IC50=1.5 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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Insectifuge	
Nephrotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

PULEGONE	Shoot	--	0.1	-0.27	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (28)

AChE-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Anti-acetylcholinesterase IC50=0.9 mM	
Anti-acetylcholinesterase IC50=136 ug/ml	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antibacterial	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Anticholinesterase	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, Oest. Biochem. & Physiol., 23, 1985, 383-8.
Antihistaminic	Ortiz De Urbina, A.V., Martin, M.L., Montero, M.J., Carron, R., Sevilla, M.A., San Roman, L. 1989. Antihistaminic activity of pulegone on the guinea-pig ileum. <i>J. Pharm. Pharmacol.</i> 42: 295-296, 1990.
Antipyretic	
Avifuge	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
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Glutathionalytic	Lawrence Review of Natural Products, Jan-92.
Hallucinogenic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That: The Essential Pharmacology of Herbs and Spices. <i>Tips</i> 13:15-20 Huxtable, R.J. 1992b. The Myth of Benificent Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
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Herbicide IC50=1.5 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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Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

PULEGONE Leaf 54.0 153.0 -0.66 *

Activities (28)

ACHe-Inhibitor	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antiacholinesterase IC50=0.9 mM	
Antiacholinesterase IC50=136 ug/ml	
Antialzheimeran?	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antibacterial	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Anticholinesterase	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Antihistaminic	Ortiz De Urbina, A.V., Martin, M.L., Montero, M.J., Carron, R., Sevilla, M.A., San Roman, L. 1989. Antihistaminic activity of pulegone on the guinea-pig ileum. <i>J. Pharm. Pharmacol.</i> 42: 295-296, 1990.
Antipyretic	
Avifuge	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
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Encephalopathic 80 mg/kg orl rat	Lawrence Review of Natural Products, Jan-92.
FLavor FEMA 5-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Economou, D., and Nahrstedt, A. 1991. Chemical, Physiological, and Toxicological Aspects of the Essential Oil of Some Species of the Genus <i>Bystropogon</i> *. <i>Planta Medica</i> , 57: 347, 1991.
Glutathionalytic	Lawrence Review of Natural Products, Jan-92.
Hallucinogenic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
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Herbicide IC50=1.5 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	Grundy, D. L. and Still, C. C., Inhibition of acetylcholinesterases by pulegone-1,2-epoxide, <i>Oest. Biochem. & Physiol.</i> , 23, 1985, 383-8.
Insectifuge	
Nephrotoxic	R.J. Hixtable (Huxtable, R.J. (as T. Max). 1992. This and That:The Essential Pharmacology of Herbs and Spices. Tips 13:15-20 Huxtable, R.J. 1992b. The Myth of Benficient Nature. The Risk of Herbal Preparations. <i>Anns. Intern. Med.</i> 117(2):165-6; Huxtable, R.
Neurotoxic	
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide	
Pulifuge	
Pulmonotoxic	
Sedative	

ROSMARINIC-ACID Plant -- 27000.0 -0.08 Fitoterapia No.62: 166.

Activities (57)

ABeta-Inhibitor	
Adenylate-Cyclase-Inhibitor	
Aldose-Reductase-Inhibitor	
AntiHIV EC50=40 ug/ml	
Antiaggregant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiallergic	
Antialzheimeran	
Antianaphylactic 1-100 mg/kg orl	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antianaphylactic ID50=1 mg/kg ivn rat	
Antianaphylactic ID50=10 mg/kg ims rat	
Antiatherosclerotic IC50=0.74 uM	
Antibacterial	<i>Planta Medica</i> , 55: 663.
Anticoagulant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplementary 1/2 aspirin	
Anticomplementary 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antidepressant	
Antiedemic 0.316-3.16 mg/kg ims	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antigonadotropic	
Antihemolytic IC70=5-10 um/l	Int. J. Immunopharmacology. Vol 10: 729, 1988.
Antihepatotoxic	
Antiherpetic 50 ug/ml	Vlietinck, A.J. and Dommissie, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Antiherpetic EC50=20 ug/ml	
Antihyperthyroid	

Antiinflammatory IC ₅₀ =1,000 uM	
Antiintegrase 10 ug/ml	
Antileukotriene	
Antilipoperoxidant	
Antimutagenic	
Antinephritic	
Antioxidant EC ₅₀ =2.7 ug/ml	Parveen, N. 1991. Antifilarial Activity of Vitex negundo Against Setaria cervi. Fitoterapia, 62(2): 163, 1991.
Antioxidant 10 uM	
Antioxidant (LDL) IC ₅₀ =0.74 uM	
Antiplaque	
Antiproliferant	
Antiprostaglandin 20 mg/kg ivn	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Antiproteolytic IC ₅₀ =0.9 mol l	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antipulmonotic	Tyler, V.E.. 1994.
Antiradicular	
Antishock	Int. J. Immunopharmacology. Vol 10: 735, 1988.
Antithyretropic	
Antithyroid	Jim Duke's personal files.
Antiuremic	
Antiviral EC ₅₀ =40 ug/ml	
Anxiolytic	
Apoptotic	
COX-1-Inhibitor IC ₅₀ =1,000 uM	
COX-2-Inhibitor IC ₅₀ >1,000 uM	
Calcium-Antagonist IC ₅₀ =1.2 uM fbt	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cytotoxic TC ₅₀ =100-150 ug/ml	
Deiodinase-Inhibitor	Jim Duke's personal files.
Immunomodulator	
Immunostimulant	
Lipoxygenase-Inhibitor	
Neuroprotective	
Pesticide	
Radioprotective	

SABINENE	Shoot	--	7.0	-0.29	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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

SABINENE	Shoot	--	35.0	-0.26	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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

SABINENE	Shoot	--	15.0	-0.28	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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

SABINENE Shoot -- 10.0 -0.29 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (5)

Antibacterial

Antihelicobacter

Antiseptic

Antiulcer

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

SABINENE Shoot -- 35.0 -0.26 Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of *Mentha aquatica* Containing Sesquiterpene Alcohols as Major Components. *Nippon Nogeikagaku Kaishi* 67(10): 1417-1419.

Activities (5)

Antibacterial

Antihelicobacter

Antiseptic

Antiulcer

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

TANNIN Leaf -- 74000.0 -0.45 List, P.H. and Horhammer, L., *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities (35)

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

TERPINENE	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
TERPINOLENE	Shoot	--	1.0	-0.78	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.

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	Shoot	--	2.0	-0.75	Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of Mentha aquatica Containing Sesquiterpene Alcohols as Major Components. Nippon Nogeikagaku Kaishi 67(10): 1417-1419.
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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					

TERPINOLENE	Shoot	--	2.0	-0.75	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (9)					
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Antifeedant					
Antinitrosaminic					
Antioxidant					
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Perfumery					Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Pesticide					

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

TERPINOLENE	Shoot	--	1.0	-0.78	Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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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					

TRANS-2-HEPTANAL	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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TRANS-2-HEPTANAL	Shoot	--	--		Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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TRANS-2-HEPTANAL	Shoot	--	--			Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
TRANS-2-HEPTANAL	Shoot	--	0.1			Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
TRANS-2-HEPTANAL	Shoot	--	--			Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VERBENYL-ACETATE	Shoot	--	3.0	1.22		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VERBENYL-ACETATE	Shoot	--	2.0	-0.82		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VERBENYL-ACETATE	Shoot	--	2.0	-0.82		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VERBENYL-ACETATE	Shoot	--	2.0	-0.82		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VERBENYL-ACETATE	Shoot	--	3.0	1.22		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
VIRIDIFLOROL	Shoot	--	140.0	1.11		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.

Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml

VIRIDIFLOROL	Shoot	--	195.0	1.94		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml

VIRIDIFLOROL	Shoot	--	135.0	1.03		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml

VIRIDIFLOROL	Shoot	--	140.0	1.11		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml

VIRIDIFLOROL	Leaf	36.0	1105.0	4.4	*	
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Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml

VIRIDIFLOROL	Shoot	--	50.0	-0.25		Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419.
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Activities (1)

Antiacetylcholinesterase IC50=25 ug/ml