

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Agathosma betulina*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-4-HYDROXYMENTHONE	Leaf Essent. Oil				--
0	(+)-8-HYDROXYMENTHONE	Leaf Essent. Oil				--
0	(+)-ISOPULEGONE	Leaf Essent. Oil				--
0	(+)-LIMONENE	Leaf	1500.0	2500.0	0.707106781186547	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	(+)-LIMONENE	Leaf Essent. Oil				--
0	(+)-LINALOOL	Leaf Essent. Oil				--
0	(+)-MENTHONE	Leaf Essent. Oil				--
0	(+)-MENTHONE	Leaf	1350.0	2250.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	(+)-PULEGONE	Leaf	1500.0	3000.0	-0.15169172521226934	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	(-)-ISOMENTHONE	Leaf Essent. Oil				--
0	(-)-ISOMENTHONE	Leaf	5250.0	8750.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	(-)-ISOPULEGONE	Leaf Essent. Oil				--
0	(-)-ISOPULEGONE	Leaf	450.0	900.0		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	(-)-PULEGONE	Leaf Essent. Oil				--
0	(-)-PULEGONE	Leaf	1650.0	2750.0	-0.7071067811865475	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	1,8-CINEOL	Leaf Essent. Oil				--
0	1-4-CINEOL	Leaf Essent. Oil				--
0	2-EPI-P-MENTHANE-8-THIOL-1-ONE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	3-METHYL-CYCLOHEXANONE	Leaf Essent. Oil				--
0	4-ACETOXY-ISOMENTHONE	Leaf Essent. Oil				--
0	4-ACETOXY-ISOPULEGONE	Leaf Essent. Oil				--
0	4-HYDROXY-DIOSPHENOL	Leaf Essent. Oil				--
0	4-HYDROXY-ISOPULEGONE	Leaf Essent. Oil				--
8	4-TERPINEOL	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	5-METHYL-FURFURAL	Leaf Essent. Oil				--
0	8-ACETOXYMENTHONE	Leaf Essent. Oil				--
0	8-ACETYL-THIOPIPERITONE	Leaf Essent. Oil				--
0	8-ACETYLTIO-P-MENTHAN-3-ONE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	8-MERCAPTO-P-MENTHA-3-ONE	Leaf				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	ALPHA-MUUROLENE	Leaf Essent. Oil				--
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil				--
0	ALPHA-PHELLANDROL	Leaf Essent. Oil				--
28	ALPHA-PINENE	Leaf Essent. Oil				--
28	ALPHA-PINENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	ALPHA-TERPINENE	Leaf				--
13	ALPHA-TERPINENE	Leaf Essent. Oil				--
23	ALPHA-TERPINEOL	Leaf Essent. Oil				--
5	ALUMINUM	Leaf		1360.0	0.6789856525717123	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	AROMADENDRENE	Leaf Essent. Oil				--
112	ASCORBIC-ACID	Leaf		4900.0	0.010737464231764774	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ASH	Leaf		81000.0	-0.666900349430093	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	BAROSMA-CAMPHOR	Leaf	1800.0	3000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	BETA-DAMASCENONE	Leaf Essent. Oil				--
5	BETA-ELEMENE	Leaf Essent. Oil				--
13	BETA-IONONE	Leaf Essent. Oil				--
3	BETA-PHELLANDRENE	Leaf Essent. Oil				--
0	BETA-PHELLANDROL	Leaf Essent. Oil				--
13	BETA-PINENE	Leaf Essent. Oil				--
3	BETA-TERPINEOL	Leaf Essent. Oil				--
35	BORNEOL	Leaf Essent. Oil				--
0	BUCHU-CAMPHOR	Leaf Essent. Oil				--
0	CALAMENENE	Leaf Essent. Oil				--
28	CALCIUM	Leaf		38800.0	1.391343499963003	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
9	CAMPHENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	CAMPHENE	Leaf Essent. Oil				--
19	CARVONE	Leaf Essent. Oil				--
24	CHROMIUM	Leaf		29.0	1.832564064465539	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	CIS-2-ACETOXY-PULEGONE	Leaf Essent. Oil				--
0	CIS-BETA-OCIMENE	Leaf Essent. Oil				--
0	CIS-CARVEOL	Leaf Essent. Oil				--
0	CIS-CARVEYL-ACETATE	Leaf Essent. Oil				--
0	CIS-LINALOOL-OXIDE	Leaf Essent. Oil				--
15	CITRONELLOL	Leaf Essent. Oil				--
2	CITRONELLYL-ACETATE	Leaf Essent. Oil				--
2	COBALT	Leaf		87.0	0.21821961505531773	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	CYMOPYROCATECHOL	Leaf Essent. Oil				--
19	D-LIMONENE	Leaf				Jim Duke's personal files.
0	DEC-CIS-4-ENOL	Leaf Essent. Oil				--
0	DEC-TRANS-4-ENOL	Leaf Essent. Oil				--
0	DELTA-TERPINEOL	Leaf Essent. Oil				--
0	DIHYDROCARVONE	Leaf Essent. Oil				--
13	DIOSMETIN	Leaf				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
34	DIOSMIN	Leaf	200.0	500.0		--
4	DIOSPHENOL	Leaf	1800.0	3600.0	0.7071067811865478	--
4	DIOSPHENOL	Leaf Essent. Oil				--
0	DIOSPHENOL-METHYL-ETHER	Leaf Essent. Oil				--
0	DIOSPHEOLENE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	DIPENTENE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	DL-PIPERITONE-EPOXIDE	Leaf	1425.0	2375.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DL-PIPERITONEPOXIDE	Leaf	1425.0	2375.0		--
0	DODECA-CIS-CIS-3,6-DIENOL	Leaf Essent. Oil				--
0	DODECA-CIS-CIS-3,6-DIENYL-ACETATE	Leaf Essent. Oil				--
0	EO	Leaf	10000.0	35000.0	2.0639741997608496	--
12	ESTRAGOLE	Leaf Essent. Oil				--
76	EUGENOL	Leaf Essent. Oil				--
6	FURFURAL	Leaf Essent. Oil				--
0	GAMMA-MUUROLENE	Leaf Essent. Oil				--
11	GAMMA-TERPINENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Leaf Essent. Oil				--
18	GUAIACOL	Leaf Essent. Oil				--
31	HESPERIDIN	Leaf	10000.0	34000.0	0.7071067811865476	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	IRON	Leaf		867.0	1.2770392926238854	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	ISOMENTHONE	Leaf Essent. Oil				--
3	ISOMENTHONE	Leaf	5250.0	8750.0	2.193021261596281	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ISONEOMENTHOL	Leaf Essent. Oil				--
0	ISONEOMENTHOL-ACETATE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOPULEGOLE	Leaf Essent. Oil				--
0	ISOPULEGOLE-ACETATE	Leaf Essent. Oil				--
4	ISOPULEGONE	Leaf Essent. Oil				--
4	ISOPULEGONE	Leaf	450.0	900.0	0.7071067811865482	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	L-MENTHONE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
60	LIMONENE	Leaf Essent. Oil				--
65	MAGNESIUM	Leaf		2210.0	-0.7397339063106452	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
14	MANGANESE	Leaf		675.0	0.6622735776500002	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	MENTHOFURAN	Leaf Essent. Oil				--
63	MENTHOL	Leaf Essent. Oil				--
0	MENTHOL-ACETATE	Leaf Essent. Oil				--
30	MENTHONE	Leaf Essent. Oil				--
3	MUCILAGE	Leaf				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
22	MYRCENE	Leaf Essent. Oil				--
22	MYRCENE	Leaf				--
0	MYRTANOL	Leaf Essent. Oil				--
0	MYRTANOL-ACETATE	Leaf Essent. Oil				--
2	MYRTENOL	Leaf Essent. Oil				--
1	MYRTENYL-ACETATE	Leaf Essent. Oil				--
0	NEOISOPULEGOLE	Leaf Essent. Oil				--
2	NEOMENTHOL	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	NEROL	Leaf Essent. Oil				--
0	NEROL-ACETATE	Leaf Essent. Oil				--
0	NEROL-ACETONE	Leaf Essent. Oil				--
39	NIACIN	Leaf		42.0	-0.6750885614025129	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	P-CYMEN-8-OL	Leaf Essent. Oil				--
16	P-CYMENE	Leaf Essent. Oil				--
0	P-CYMOL	Essential Oil				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	P-MENTH-1-EN-9-AL	Leaf Essent. Oil				--
0	P-MENTH-1-EN-9-OL	Leaf Essent. Oil				--
0	P-MENTH-1-EN-9-YL-ACETATE	Leaf Essent. Oil				--
0	P-MENTH-4(8)-EN-7-OL	Leaf Essent. Oil				--
0	P-MENTH-8-EN-7-OL	Leaf Essent. Oil				--
0	P-MENTHA-1,3,6-TRIENE	Leaf Essent. Oil				--
0	P-MENTHA-1,8-DIEN-10-AL	Leaf Essent. Oil				--
0	P-MENTHA-1,8-DIEN-10-OL	Leaf Essent. Oil				--
0	P-MENTHAN-3-ON-8-THIOL	Leaf				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	P-MENTHANE-8-THIOL-1-ONE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	P-MENTHANE-8-THIOL-3-ONE	Leaf Essent. Oil				--
6	PHENETHYL-ALCOHOL	Leaf Essent. Oil				--
4	PHOSPHORUS	Leaf		6780.0	0.33274881093925496	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PINOL	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	PIPERITENONE	Leaf Essent. Oil				--
7	PIPERITONE	Leaf Essent. Oil				--
14	POTASSIUM	Leaf		11700.0	-0.8232807551707827	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PROTEIN	Leaf		92000.0	-1.1955701649552826	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PSEUDODIOSPHENOL	Leaf Essent. Oil				--
28	PULEGONE	Leaf	1650.0	2750.0	-0.32792065886702804	--
0	PULEGONE-EPOXIDE-A	Leaf Essent. Oil				--
176	QUERCETIN	Plant				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	QUERCETIN-3,7-DI-O-BETA-D-GLUGOSIDE	Leaf				--
0	QUERCETIN-3,7-DIGLUCOSIDE	Leaf				--
0	QUERCETRIN-3,7-DIGLUCOSIDE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	QUERCETRIN-3,7-GLUCOSIDE	Essential Oil				--
0	RESIN	Leaf		50000.0	-0.27511406022450346	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Leaf		1.1	-0.172705289047245	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
87	RUTIN	Leaf				--
87	RUTIN	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
5	SABINENE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	SELENIUM	Leaf		70.0	4.995871526729794	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	SILICON	Leaf		43.0	-0.28529562369022266	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	SODIUM	Leaf		2760.0	-0.15708991303999795	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	SPATHULENOL	Leaf Essent. Oil				--
23	TERPINEN-4-OL	Leaf				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
9	TERPINOLENE	Leaf Essent. Oil				--
31	THIAMIN	Leaf	7.0	19.0	2.2289490986880964	--
4	TIN	Leaf		11.0	-0.5530067419183887	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	TRANS-2-ACETOXY-PULEGONE	Leaf Essent. Oil				--
0	TRANS-2-HYDROXYMENTHONE	Leaf Essent. Oil				--
0	TRANS-BETA-OCIMENE	Leaf Essent. Oil				--
1	TRANS-CARVEOL	Leaf Essent. Oil				--
0	TRANS-CARVEYL-ACETATE	Leaf Essent. Oil				--
0	TRANS-LINALOOL-OXIDE	Leaf Essent. Oil				--
0	VINYL-GUAIACOL	Leaf Essent. Oil				--
77	ZINC	Leaf		84.0	-0.01125863721237699	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.