

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Agathosma betulina*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
112	ASCORBIC-ACID	Leaf		4900.0	0.010737464231764774	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
77	ZINC	Leaf		84.0	-0.01125863721237699	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
76	EUGENOL	Leaf Essent. Oil				--
65	MAGNESIUM	Leaf		2210.0	-0.7397339063106452	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
63	MENTHOL	Leaf Essent. Oil				--
60	LIMONENE	Leaf Essent. Oil				--
60	SELENIUM	Leaf		70.0	4.995871526729794	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
39	NIACIN	Leaf		42.0	-0.6750885614025129	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
35	BORNEOL	Leaf Essent. Oil				--
34	DIOSMIN	Leaf	200.0	500.0		--
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.
31	THIAMIN	Leaf	7.0	19.0	2.2289490986880964	--
30	MENTHONE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Leaf		38800.0	1.391343499963003	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
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.
28	PULEGONE	Leaf	1650.0	2750.0	-0.32792065886702804	--
24	CHROMIUM	Leaf		29.0	1.832564064465539	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
23	TERPINEN-4-OL	Leaf				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
23	ALPHA-TERPINEOL	Leaf Essent. Oil				--
22	MYRCENE	Leaf Essent. Oil				--
22	MYRCENE	Leaf				--
19	D-LIMONENE	Leaf				Jim Duke's personal files.
19	CARVONE	Leaf Essent. Oil				--
18	GUAIACOL	Leaf Essent. Oil				--
16	P-CYMENE	Leaf Essent. Oil				--
15	CITRONELLOL	Leaf Essent. Oil				--
15	RIBOFLAVIN	Leaf		1.1	-0.172705289047245	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.
14	POTASSIUM	Leaf		11700.0	-0.8232807551707827	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
13	BETA-IONONE	Leaf Essent. Oil				--
13	ALPHA-TERPINENE	Leaf Essent. Oil				--
13	ALPHA-TERPINENE	Leaf				--
13	BETA-PINENE	Leaf Essent. Oil				--
12	ESTRAGOLE	Leaf Essent. Oil				--
11	GAMMA-TERPINENE	Leaf Essent. Oil				--
11	ALPHA-PHELLANDRENE	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.
10	NEROL	Leaf Essent. Oil				--
9	CAMPHENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	TERPINOLENE	Leaf Essent. Oil				--
9	CAMPHENE	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.
7	PIPERITONE	Leaf Essent. Oil				--
7	DIPENTENE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Leaf		867.0	1.2770392926238854	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
6	FURFURAL	Leaf Essent. Oil				--
6	PHENETHYL-ALCOHOL	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	BETA-ELEMENE	Leaf Essent. Oil				--
5	MENTHOFURAN	Leaf Essent. Oil				--
5	ALUMINUM	Leaf		1360.0	0.6789856525717123	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	SABINENE	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.
4	DIOSPHEINOL	Leaf Essent. Oil				--
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.
4	TIN	Leaf		11.0	-0.5530067419183887	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	PHOSPHORUS	Leaf		6780.0	0.33274881093925496	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.
4	ISOPULEGONE	Leaf Essent. Oil				--
4	DIOSPHEINOL	Leaf	1800.0	3600.0	0.7071067811865478	--
3	MUCILAGE	Leaf				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-PHELLANDRENE	Leaf Essent. Oil				--
3	AROMADENDRENE	Leaf Essent. Oil				--
3	BETA-TERPINEOL	Leaf Essent. Oil				--
3	PIPERITENONE	Leaf Essent. Oil				--
3	BETA-DAMASCENONE	Leaf Essent. Oil				--
3	ISOMENTHONE	Leaf Essent. Oil				--
2	COBALT	Leaf		87.0	0.21821961505531773	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	CITRONELLYL-ACETATE	Leaf Essent. Oil				--
2	NEOMENTHOL	Leaf Essent. Oil				--
2	MYRTENOL	Leaf Essent. Oil				--
1	TRANS-CARVEOL	Leaf Essent. Oil				--
1	SODIUM	Leaf		2760.0	-0.15708991303999795	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	MYRTENYL-ACETATE	Leaf Essent. Oil				--
0	TRANS-2-ACETOXY-PULEGONE	Leaf Essent. Oil				--
0	ISONEOMENTHOL-ACETATE	Leaf Essent. Oil				--
0	ISOPULEGOLE-ACETATE	Leaf Essent. Oil				--
0	BETA-PHELLANDROL	Leaf Essent. Oil				--
0	P-MENTH-1-EN-9-AL	Leaf Essent. Oil				--
0	RESIN	Leaf		50000.0	-0.27511406022450346	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	MYRTANOL-ACETATE	Leaf Essent. Oil				--
0	8-ACETYLTIO-P-MENTHAN-3-ONE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	CIS-CARVEOL	Leaf Essent. Oil				--
0	4-HYDROXY-ISOPULEGONE	Leaf Essent. Oil				--
0	ISONEOMENTHOL	Leaf Essent. Oil				--
0	ISOPULEGOLE	Leaf Essent. Oil				--
0	ALPHA-PHELLANDROL	Leaf Essent. Oil				--
0	(+)-LINALOOL	Leaf Essent. Oil				--
0	P-CYMEN-8-OL	Leaf Essent. Oil				--
0	QUERCETRIN-3,7-GLUCOSIDE	Essential Oil				--
0	MYRTANOL	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	4-ACETOXY-ISOPULEGONE	Leaf Essent. Oil				--
0	CALAMENENE	Leaf Essent. Oil				--
0	TRANS-LINALOOL-OXIDE	Leaf Essent. Oil				--
0	3-METHYL-CYCLOHEXANONE	Leaf Essent. Oil				--
0	GAMMA-MUUROLENE	Leaf Essent. Oil				--
0	2-EPI-P-MENTHANE-8-THIOL-1-ONE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	DODECA-CIS-CIS-3,6-DIENYL-ACETATE	Leaf Essent. Oil				--
0	(+)-ISOPULEGONE	Leaf Essent. Oil				--
0	L-MENTHONE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	P-MENTHANE-8-THIOL-3-ONE	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	BUCHU-CAMPHOR	Leaf Essent. Oil				--
0	CIS-LINALOOL-OXIDE	Leaf Essent. Oil				--
0	DELTA-TERPINEOL	Leaf Essent. Oil				--
0	PROTEIN	Leaf		92000.0	-1.1955701649552826	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ALPHA-MUUROLENE	Leaf Essent. Oil				--
0	DODECA-CIS-CIS-3,6-DIENOL	Leaf Essent. Oil				--
0	P-MENTHA-1,8-DIEN-10-OL	Leaf Essent. Oil				--
0	CIS-2-ACETOXY-PULEGONE	Leaf Essent. Oil				--
0	TRANS-BETA-OCIMENE	Leaf Essent. Oil				--
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.
0	TRANS-2-HYDROXYMENTHONE	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.
0	DIOSPHEOLENE	Leaf Essent. Oil				--
0	MENTHOL-ACETATE	Leaf Essent. Oil				--
0	P-MENTHA-1,8-DIEN-10-AL	Leaf Essent. Oil				--
0	QUERCETRIN-3,7-DIGLUCOSIDE	Essential Oil				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PULEGONE-EPOXIDE-A	Leaf Essent. Oil				--
0	CIS-BETA-OCIMENE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ASH	Leaf		81000.0	-0.666900349430093	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	(-)-PULEGONE	Leaf Essent. Oil				--
0	1-4-CINEOL	Leaf Essent. Oil				--
0	4-ACETOXY-ISOMENTHONE	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	PSEUDODIOSPHENOL	Leaf Essent. Oil				--
0	P-MENTHA-1,3,6-TRIENE	Leaf Essent. Oil				--
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	8-ACETYL-THIOPIPERITONE	Leaf Essent. Oil				--
0	NEROL-ACETONE	Leaf Essent. Oil				--
0	VINYL-GUAIACOL	Leaf Essent. Oil				--
0	(-)-ISOPULEGONE	Leaf Essent. Oil				--
0	1,8-CINEOL	Leaf Essent. Oil				--
0	SPATHULENOL	Leaf Essent. Oil				--
0	P-MENTHANE-8-THIOL-1-ONE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	(+)-8-HYDROXYMENTHONE	Leaf Essent. Oil				--
0	4-HYDROXY-DIOSPHENOL	Leaf Essent. Oil				--
0	P-MENTH-8-EN-7-OL	Leaf Essent. Oil				--
0	EO	Leaf	10000.0	35000.0	2.0639741997608496	--
0	NEROL-ACETATE	Leaf Essent. Oil				--
0	(-)-ISOMENTHONE	Leaf Essent. Oil				--
0	DIHYDROCARVONE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	8-ACETOXYMENTHONE	Leaf Essent. Oil				--
0	DIOSPHEINOL-METHYL-ETHER	Leaf Essent. Oil				--
0	P-MENTH-4(8)-EN-7-OL	Leaf Essent. Oil				--
0	PINOL	Leaf Essent. Oil				--
0	DL-PIPERITONEPOXIDE	Leaf	1425.0	2375.0		--
0	5-METHYL-FURFURAL	Leaf Essent. Oil				--
0	(+)-MENTHONE	Leaf Essent. Oil				--
0	TRANS-CARVEYL-ACETATE	Leaf Essent. Oil				--
0	QUERCETIN-3,7-DIGLUCOSIDE	Leaf				--
0	(+)-4-HYDROXYMENTHONE	Leaf Essent. Oil				--
0	DEC-TRANS-4-ENOL	Leaf Essent. Oil				--
0	P-MENTH-1-EN-9-YL-ACETATE	Leaf Essent. Oil				--
0	(+)-LIMONENE	Leaf Essent. Oil				--
0	CIS-CARVEYL-ACETATE	Leaf Essent. Oil				--
0	QUERCETIN-3,7-DI-O-BETA-D-GLUGOSIDE	Leaf				--
0	DEC-CIS-4-ENOL	Leaf Essent. Oil				--
0	NEOISOPULEGOLE	Leaf Essent. Oil				--
0	P-MENTH-1-EN-9-OL	Leaf Essent. Oil				--
0	CYMOPYROCATECHOL	Leaf Essent. Oil				--
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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.