

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Zingiber officinale*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ZONARENE	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	ZINGIBERONE	Rhizome Essent. Oil				--
2	ZINGIBERONE	Rhizome	0.3	400.0		--
0	ZINGIBEROL	Essential Oil				--
0	ZINGIBEROL	Rhizome Essent. Oil	2900.0	160000.0		--
0	ZINGIBEROL	Rhizome	0.0	8000.0		--
0	ZINGIBERINE	Root				--
0	ZINGIBERENOL	Rhizome		100.0		--
0	ZINGIBERENOL	Rhizome Essent. Oil				--
0	ZINGIBERENES	Rhizome	890.0	17836.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	ZINGIBERENE	Essential Oil				--
6	ZINGIBERENE	Root Essent. Oil				--
6	ZINGIBERENE	Rhizome Essent. Oil				--
6	ZINGIBERENE	Rhizome	0.5	600.0	-1.0	--
1	ZINGIBAIN	Rhizome				--
1	ZINGIBAIN	Root				Abstract (See species file)
13	ZINGERONE	Rhizome				--
13	ZINGERONE	Essential Oil				--
13	ZINGERONE	Root Essent. Oil				--
13	ZINGERONE	Rhizome Essent. Oil				--
0	ZINGERBERONE	Essential Oil				--
77	ZINC	Rhizome		57.0	-0.18700695320743768	--
77	ZINC	Root				--
0	ZERUMBODIENONE	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	XANTHORRHIZOL	Rhizome	1.0	50.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	XANTHORRHIZOL	Rhizome Essent. Oil		1000.0		--
0	WATER	Rhizome	93090.0	930000.0	0.9531262707913175	--
0	WATER	Root		930000.0	1.052183415545071	--
0	VIT-B-6	Rhizome	1.6	8.7		--
0	VIT-B-6	Root	1.6	8.7	-0.2586482502443934	USDA's Ag Handbook 8 and sequelae)
28	VANILLIN	Plant				Stitt, Paul. Why George should eat broccoli.
24	VANILLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
3	VALINE	Root	730.0	4202.0	0.07599207749422336	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Tuber				--
3	VALINE	Shoot				--
3	VALINE	Rhizome	730.0	4202.0	1.0	--
0	URIDINE	Rhizome		11.0	1.0000000000000002	--
0	UNDECAN-2-ONE	Rhizome				--
0	UNDECAN-2-ONE	Rhizome Essent. Oil				--
0	UNDECAN-2-OL	Rhizome	1.0	25.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	UNDECAN-2-OL	Rhizome Essent. Oil		500.0		--
8	TYROSINE	Rhizome	200.0	1122.0	-1.0	--
8	TYROSINE	Root	200.0	1122.0	-1.4340366854424644	USDA's Ag Handbook 8 and sequelae)
29	TRYPTOPHAN	Rhizome	120.0	693.0	-1.0	--
29	TRYPTOPHAN	Root	120.0	693.0	-0.48600202664790343	USDA's Ag Handbook 8 and sequelae)
0	TRICYCLEN	Rhizome	2.0	115.0		--
0	TRICYCLEN	Rhizome Essent. Oil		2300.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRANS-ROSE-OXIDE	Rhizome				--
0	TRANS-OCTEN-2-AL	Rhizome Essent. Oil				--
0	TRANS-OCTEN-2-AL	Rhizome				--
0	TRANS-NEROLIDOL	Rhizome Essent. Oil	5.0	7000.0		--
0	TRANS-NEROLIDOL	Rhizome	5.0	350.0		--
0	TRANS-LINALOOL-OXIDE	Rhizome Essent. Oil				--
0	TRANS-LINALOL-OXIDE	Rhizome				--
0	TRANS-GERANIC-ACID	Rhizome				--
0	TRANS-BETA-SESQUIPELLANDROL	Rhizome Essent. Oil		7200.0		--
0	TRANS-BETA-SESQUIPELLANDROL	Rhizome	6.0	360.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	TRANS-BETA-FARNESENE	Rhizome	1.0	1200.0	-1.0	--
0	TRANS-8-SHOGAOL	Rhizome		40.0		--
0	TRANS-6-SHOGAOL	Rhizome		40.0		--
0	TRANS-3-(3-4-DIMETHOXY-PHENYL)-4-(TRANS-3-4-DIMETHOXY-STYRYL)-CYCLOHEXENE	Rhizome		55.8		--
0	TRANS-3-(2-4-5-TRIMETHOXY-PHENYL)-4-(TRANS-3-4-DIMETHOXY-STYRYL)-CYCLOHEXENE	Rhizome		13.9		--
0	TRANS-12-SHOGOAL	Rhizome				--
0	TRANS-12-SHOGAOL	Rhizome				--
0	TRANS-10-SHOGOAL	Rhizome				--
0	TRANS-10-SHOGAOL	Rhizome				--
0	TRAN-8-SHOGOAL	Rhizome		40.0		--
0	TRAN-6-SHOGOAL	Rhizome		40.0		--
4	TIN	Root	0.1	1.3	-1.5436732662398835	--
4	TIN	Rhizome		13.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	THREONINE	Tuber				--
4	THREONINE	Rhizome	360.0	2057.0	-1.0	--
4	THREONINE	Shoot				--
4	THREONINE	Root	360.0	2057.0	-0.4948266685368329	USDA's Ag Handbook 8 and sequelae)
0	THIAMINE	Root	0.1	1.5	-0.5634413774971821	--
31	THIAMIN	Root	0.0	3.0	-0.32687193108858614	--
31	THIAMIN	Rhizome	0.0	3.0	-0.9831353843426084	--
0	TERT-BUTANOL	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	TERPINOLENE	Rhizome Essent. Oil		1800.0		--
9	TERPINOLENE	Rhizome	1.0	90.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
23	TERPINEN-4-OL	Rhizome Essent. Oil				--
23	TERPINEN-4-OL	Rhizome				--
0	SUGARS	Root	5600.0	80000.0	-0.231158975572398	--
14	SUCROSE	Rhizome				--
14	SUCROSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
12	STIGMASTEROL	Root	40.0	200.0	0.32535405334624357	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
8	STEARIC-ACID	Root	170.0	1540.0	2.8114380671291452	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Rhizome	170.0	1540.0	1.0	--
5	STARCH	Rhizome	123000.0	500000.0	0.41680828464384206	--
5	STARCH	Root	35000.0	600000.0	1.18913249334548	--
1	SODIUM	Rhizome	60.0	709.0	0.18755999323325184	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	SODIUM	Root	30.0	423.0	-0.31581734202184225	--
4	SILICON	Rhizome		285.0		--
4	SILICON	Root	2.0	28.5	-0.2119845357116175	--
0	SHOGAOLS	Rhizome		1800.0		--
0	SHOGAOLS	Root		1800.0		--
18	SHOGAOL	Rhizome				--
18	SHOGAOL	Essential Oil				--
18	SHOGAOL	Rhizome Essent. Oil				--
18	SHOGAOL	Root Essent. Oil				--
18	SHOGAOL	Root				--
14	SHIKIMIC-ACID	Leaf				--
0	SFA	Root	2030.0	11085.0	3.076072794631063	USDA's Ag Handbook 8 and sequelae)
0	SFA	Rhizome	2030.0	11085.0		--
0	SESQUITHUJENE	Rhizome				--
0	SESQUITHUJENE	Essential Oil				--
0	SESQUITERPENE-HYDROCARBON	Rhizome Essent. Oil				--
0	SESQUIPELLANDRENE	Rhizome Essent. Oil				--
1	SERINE	Tuber				--
1	SERINE	Root	450.0	2596.0	-0.4317372218630029	USDA's Ag Handbook 8 and sequelae)
1	SERINE	Shoot				--
1	SERINE	Rhizome	450.0	2596.0	-1.0	--
0	SELINA-3,7(11)-DIENE	Rhizome Essent. Oil		1300.0		--
0	SELINA-3,7(11)-DIENE	Rhizome	1.0	65.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
60	SELENIUM	Root	0.1	1.0	-0.29131634494743897	--
60	SELENIUM	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SEC-BUTANOL	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	SALICYLATES	Root	45.0	250.0	0.1478264757482174	--
5	SABINENE	Rhizome		20.0		--
5	SABINENE	Rhizome Essent. Oil		700.0		--
0	ROSEFURAN	Rhizome	1.0	90.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ROSEFURAN	Rhizome Essent. Oil		1800.0		--
15	RIBOFLAVIN	Rhizome	0.0	5.0	-0.10465353747473792	--
15	RIBOFLAVIN	Root	0.2	3.1	-0.21327168080429257	--
1	RAFFINOSE	Rhizome				--
1	RAFFINOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
176	QUERCETIN	Plant				Stitt, Paul. Why George should eat broccoli.
4	PUFA	Root	1540.0	8400.0	1.333787882042874	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Rhizome	1540.0	8400.0	1.0	--
0	PROTEIN	Rhizome	14000.0	129000.0	-0.1125496505640368	--
0	PROTEIN	Root	7000.0	100000.0	-0.20677098370529998	--
0	PROTEASE	Rhizome				--
2	PROPIONALDEHYDE	Rhizome				--
2	PROPIONALDEHYDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	PROLINE	Root	410.0	2376.0	0.2837932421997398	USDA's Ag Handbook 8 and sequelae)
0	PROLINE	Rhizome	410.0	2376.0	-1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROLAMINE	Plant	1540.0	14190.0		--
14	POTASSIUM	Root	1323.0	18900.0	0.22854620707535842	--
14	POTASSIUM	Rhizome	2640.0	25079.0	1.345332062692374	--
2	PIPECOLIC-ACID	Rhizome		320.0		--
0	PIN-2-EN-5-OL	Rhizome				--
2	PHYTOSTEROLS	Root	150.0	913.0	0.021969609312565776	USDA's Ag Handbook 8 and sequelae)
2	PHYTOSTEROLS	Rhizome	150.0	913.0		--
4	PHOSPHORUS	Rhizome	320.0	5323.0	0.4586280406131061	--
4	PHOSPHORUS	Root	181.0	2580.0	-0.1647701538167895	--
0	PHOSPHATIDIC-ACID	Root				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	PHOSPHATIDIC-ACID	Rhizome				--
7	PHENYLALANINE	Root	450.0	2455.0	-0.39322284344633335	USDA's Ag Handbook 8 and sequelae)
7	PHENYLALANINE	Rhizome	450.0	2455.0	1.0	--
0	PERILLENE	Rhizome Essent. Oil		1900.0		--
0	PERILLENE	Rhizome	1.0	95.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PERILLEN	Rhizome Essent. Oil				--
0	PERILLEN	Rhizome				--
11	PERILLALDEHYDE	Rhizome Essent. Oil				--
0	PENTOSANS	Rhizome				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PENTAN-2-OL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	PENTADECANOIC-ACID	Rhizome				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
4	PATCHOULI-ALCOHOL	Rhizome Essent. Oil				--
4	PATCHOULI-ALCOHOL	Rhizome				--
3	PARADOL	Rhizome				--
11	PANTOTHENIC-ACID	Root	2.0	11.0	-0.9376231626080279	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Rhizome	2.0	11.0		--
2	PALMITOLEIC-ACID	Rhizome	210.0	1145.0	1.0	--
2	PALMITOLEIC-ACID	Root	210.0	1145.0	0.05724502554235483	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Rhizome	1200.0	11220.0	1.0	--
13	PALMITIC-ACID	Root	1200.0	11220.0	0.13536149219761523	USDA's Ag Handbook 8 and sequelae)
0	P-MENTHA-2,8-DIEN-1-OL	Rhizome				--
0	P-MENTHA-1-8-DIEN-7-OL	Rhizome				--
0	P-MENTHA-1,5-DIEN-7-OL	Rhizome				--
13	P-HYDROXY-BENZOIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
16	P-CYMENE	Rhizome Essent. Oil		26000.0		--
16	P-CYMENE	Rhizome		90.0	-0.47413848530364283	--
0	P-CYMEN-8-OL	Rhizome Essent. Oil		700.0		--
0	P-CYMEN-8-OL	Rhizome	0.5	35.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
25	P-COUMARIC-ACID	Rhizome		19.0	-1.0	--
9	OXALIC-ACID	Root		5000.0	2.5415261372448525	--
9	OXALIC-ACID	Rhizome		5000.0		--
18	OLEIC-ACID	Root	1190.0	11000.0	3.056426676222409	USDA's Ag Handbook 8 and sequelae)
18	OLEIC-ACID	Rhizome	1190.0	11000.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	OCTAN-2-OL	Rhizome				--
0	OCTAN-1-OL-ACETATE	Rhizome				--
0	OCTAN-1-AL	Rhizome Essent. Oil		800.0		--
0	OCTAN-1-AL	Rhizome	2.0	40.0		--
0	OCT-TRANS-2-EN-1-AL	Rhizome				--
0	NONYL-ALDEHYDE	Rhizome Essent. Oil				--
0	NONYL-ALDEHYDE	Rhizome				--
0	NONANAL	Rhizome	2.0	50.0	1.0	--
0	NONANAL	Root	2.0	50.0		--
0	NONAN-2-ONE	Rhizome	8.0	160.0		--
0	NONAN-2-ONE	Rhizome Essent. Oil		3200.0		--
0	NONAN-2-OL	Rhizome		10.0		--
0	NONAN-2-OL	Rhizome Essent. Oil		2000.0		--
0	NONAN-1-AL	Rhizome				--
0	NITROGEN	Rhizome	16000.0	24440.0		--
0	NITROGEN	Root	16000.0	24440.0	-0.453393339582228	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	NICKEL	Rhizome	2.0	5.2	1.0	--
3	NICKEL	Root	2.0	5.2	1.752676229894103	--
39	NIACIN	Rhizome	5.0	135.0	1.0692722579935732	--
39	NIACIN	Root	3.6	51.0	0.0220587467388613	--
11	NEROLIDOL	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gokeikagaku Kaishi 61(9): 1119-1122.
11	NEROLIDOL	Rhizome Essent. Oil				--
11	NEROLIDOL	Rhizome		60.0		--
0	NEROL-OXIDE	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	NEROL	Rhizome				--
10	NEROL	Rhizome Essent. Oil				--
4	NERAL	Rhizome		410.0		--
4	NERAL	Rhizome Essent. Oil	81000.0	260000.0		--
0	NEOISOPULEGOLE	Rhizome Essent. Oil				--
0	NEO-ISOPULEGOL	Rhizome				--
0	N-UNDECANONE	Rhizome Essent. Oil				--
0	N-UNDECANONE	Rhizome				--
0	N-PROPANOL	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	N-PROPANOL	Rhizome				--
0	N-OCTANOL	Rhizome				--
0	N-OCTANE	Rhizome				--
0	N-OCTANE	Essential Oil				--
0	N-OCTANE	Rhizome Essent. Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	N-NONANONE	Rhizome Essent. Oil				--
0	N-NONANONE	Rhizome				--
0	N-NONANOL	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	N-NONANOL	Rhizome				--
0	N-NONANE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	N-NONANE	Rhizome				--
1	N-HEPTANE	Rhizome				--
1	N-DECANAL	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gokeikagaku Kaishi 61(9): 1119-1122.
1	N-BUTYRALDEHYDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gokeikagaku Kaishi 61(9): 1119-1122.
1	N-BUTYRALDEHYDE	Rhizome				--
5	MYRTENAL	Rhizome Essent. Oil		600.0		--
5	MYRTENAL	Rhizome	0.5	30.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	MYRISTIC-ACID	Root	180.0	1650.0	1.7305384293651185	USDA's Ag Handbook 8 and sequelae)
6	MYRISTIC-ACID	Rhizome	180.0	1650.0	-1.0	--
34	MYRICETIN	Plant				Stitt, Paul. Why George should eat broccoli.
22	MYRCENE	Rf	2.0	950.0		--
22	MYRCENE	Rhizome Essent. Oil		19000.0	-1.0	--
22	MYRCENE	Rhizome	2.0	950.0	-1.0	--
13	MUFA	Rhizome	1540.0	8400.0	1.0	--
13	MUFA	Root	1540.0	8400.0	2.513577974996003	USDA's Ag Handbook 8 and sequelae)
3	METHYL-NONYL-KETONE	Rhizome Essent. Oil				--
3	METHYL-NONYL-KETONE	Rhizome				--
2	METHYL-ISOBUTYL-KETONE	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	METHYL-HEPTENONE	Rhizome Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-HEPTENONE	Rhizome				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	METHYL-GLYOXAL	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	METHYL-GINGEROL	Essential Oil				--
2	METHYL-CAPRYLATE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	METHYL-ALLYL-SULFIDE	Rhizome				--
0	METHYL-ALLYL-SULFIDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
3	METHYL-ACETATE	Rhizome				--
3	METHYL-ACETATE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	METHYL-8-SHOGOAL	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	METHYL-8-GINGEROL	Rhizome				--
0	METHYL-6-SHOGOAL	Rhizome				--
0	METHYL-6-GINGEROL	Rhizome				--
0	METHYL-12-GINGEROL	Rhizome				--
0	METHYL-12-GINGEDIOL	Rhizome				--
0	METHYL-10-SHOGOAL	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	METHYL-10-GINGEROL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	METHIONINE	Rhizome	130.0	737.0	-1.0	--
15	METHIONINE	Root	130.0	737.0	-0.5917219440063812	USDA's Ag Handbook 8 and sequelae)
0	MENTHOL-ACETATE	Rhizome				--
0	MENTHOL-ACETATE	Rhizome Essent. Oil				--
23	MELATONIN	Rhizome		0.001		Hattori, A., et. al. 1995. Identification of Melatonin in Plants and its Effects on Plasma Melatonin Levels and Binding to Melatonin Receptors in Vertebrates. Biochem. Mol. Biol. Int., 35(3): 627-634.
14	MANGANESE	Rhizome	106.0	350.0	1.4980699854714286	--
14	MANGANESE	Root	2.4	33.8	-0.14226990626562633	--
65	MAGNESIUM	Rhizome	430.0	2690.0	1.0779788333953992	--
65	MAGNESIUM	Root	188.0	2690.0	0.0683510412136399	--
4	LYSINE	Root	570.0	3110.0	-0.5755610272389462	USDA's Ag Handbook 8 and sequelae)
4	LYSINE	Rhizome	570.0	3110.0	-1.0	--
27	LINOLEIC-ACID	Root	1200.0	11220.0	3.017959618154365	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Rhizome	1200.0	11220.0	1.0	--
0	LINALOOL-PROPIONATE	Rhizome Essent. Oil				--
0	LINALOOL-OXIDE	Rhizome				--
53	LINALOOL	Rhizome Essent. Oil	3200.0	30000.0	1.0	--
53	LINALOOL	Root Essent. Oil				--
53	LINALOOL	Rhizome		50.0	-1.0	--
0	LINALOL	Rhizome		50.0	-1.0	--
60	LIMONENE	Rhizome	17.0	1050.0	0.6650265305559545	--
60	LIMONENE	Rhizome Essent. Oil		21000.0	1.411888259893775	--
2	LEUCINE	Root	740.0	4257.0	-0.0564322869347267	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Tuber				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	LEUCINE	Rhizome	740.0	4257.0	1.0	--
20	LECITHIN	Rhizome				--
20	LECITHIN	Root				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
7	LAURIC-ACID	Rhizome	390.0	3630.0		--
7	LAURIC-ACID	Root	390.0	3630.0	1.4134619657773633	USDA's Ag Handbook 8 and sequelae)
7	LAURIC-ACID	Rhizome Essent. Oil		900.0		--
1	LABDA-TRANS-8(17)-12-DIENE-15-16-DIAL	Rhizome				--
0	KILOCALORIES	Rhizome	690.0	3764.0	1.0	--
0	KILOCALORIES	Root	690.0	3764.0	0.8753423179683022	USDA's Ag Handbook 8 and sequelae)
75	KAEMPFEROL	Plant				Stitt, Paul. Why George should eat broccoli.
0	JUNIPER-CAMPHOR	Rhizome Essent. Oil				--
1	ISOVALERALDEHYDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
1	ISOVALERALDEHYDE	Rhizome				--
3	ISOLEUCINE	Rhizome	510.0	2926.0	1.0	--
3	ISOLEUCINE	Root	510.0	2926.0	-0.2833451886291646	USDA's Ag Handbook 8 and sequelae)
3	ISOLEUCINE	Tuber				--
2	ISOGINGERENONE-B	Rhizome		4.7		--
0	ISOEUGENOL-METHYL-ETHER	Rhizome	0.6	40.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ISOEUGENOL-METHYL-ETHER	Rhizome Essent. Oil		800.0		--
16	ISOEUGENOL	Rhizome				--
7	ISOBORNEOL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ISOBORNEOL	Rhizome Essent. Oil				--
6	IRON	Root	1.1	15.0	-0.4198613477374219	--
6	IRON	Rhizome	4.0	162.0	-0.5945282624931012	--
0	HUMULENE-EPOXIDE-2	Rhizome				--
0	HUMULENE-EPOXIDE-1	Rhizome				--
2	HUMULENE	Rhizome				--
2	HUMULENE	Root				--
7	HISTIDINE	Root	300.0	1738.0	-0.05270016889774364	USDA's Ag Handbook 8 and sequela)
7	HISTIDINE	Rhizome	300.0	1738.0	-1.0	--
3	HEXANOL	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAN-1-OL	Rhizome				--
0	HEXAN-1-OL	Rhizome Essent. Oil				--
0	HEXAN-1-AL	Rhizome Essent. Oil	2.0	700.0		--
0	HEXAN-1-AL	Rhizome	2.0	35.0		--
2	HEXAHYDROCURCUMIN	Rhizome	21.3	25.1		--
2	HEXAHYDROCURCUMIN	Rhizome Essent. Oil				--
0	HEPTAN-2-ONE	Rhizome Essent. Oil				--
0	HEPTAN-2-ONE	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPTAN-2-OL	Rhizome Essent. Oil		2700.0		--
0	HEPTAN-2-OL	Rhizome	1.0	135.0		--
1	HEPTADECANOIC-ACID	Rhizome				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
3	GUAIOL	Rhizome Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GUAIL	Rhizome				--
0	GLYOXAL	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
12	GLYCINE	Tuber				--
12	GLYCINE	Shoot				--
12	GLYCINE	Rhizome	430.0	2486.0	-1.0	--
12	GLYCINE	Root	430.0	2486.0	-0.22589147640123697	USDA's Ag Handbook 8 and sequelae)
0	GLUTELIN	Rhizome	2506.0	23091.0		--
0	GLUTELIN	Root	2506.0	23091.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	GLUTAMIC-ACID	Root	1620.0	9328.0	-0.49975515668744586	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Rhizome	1620.0	9328.0	1.0	--
7	GLUCOSE	Rhizome				--
7	GLUCOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GLOBULIN	Rhizome	2366.0	21801.0		--
0	GLOBULIN	Root	2366.0	21801.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GLANOLACTONE	Rhizome		120.0		--
0	GINGERONE	Rhizome				--
0	GINGERONE	Root				--
0	GINGEROLS	Rhizome		13200.0		--
0	GINGEROL-METHYL-ETHER	Rhizome				--
27	GINGEROL	Root Essent. Oil				--
27	GINGEROL	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
27	GINGEROL	Rhizome				--
0	GINGERGLYCOLIPID-C	Rhizome		14.0		--
0	GINGERGLYCOLIPID-B	Rhizome	14.0	15.0		--
0	GINGERGLYCOLIPID-A	Rhizome		13.0		--
2	GINGERENONE-C	Rhizome		14.2		--
2	GINGERENONE-B	Rhizome		4.7		--
3	GINGERENONE-A	Rhizome	118.0	136.0		--
0	GINGEDIACETATE	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
0	GINGEDIACETATE	Rhizome				--
0	GERMANIUM	Rhizome	87.0	169.0		--
5	GERANYL-ACETATE	Rhizome Essent. Oil				--
5	GERANYL-ACETATE	Rhizome				--
0	GERANIOL-ACETATE	Rhizome				--
0	GERANIOL-ACETATE	Rhizome Essent. Oil		2000.0		--
35	GERANIOL	Rhizome	2.0	345.0		--
35	GERANIOL	Rhizome Essent. Oil		6900.0		--
13	GERANIAL	Rhizome		980.0		--
13	GERANIAL	Rhizome Essent. Oil	159000.0	400000.0		--
11	GAMMA-TERPINENE	Rhizome		1230.0	1.0	--
11	GAMMA-TERPINENE	Rhizome Essent. Oil		500.0		--
0	GAMMA-SELINENE	Rhizome	35.0	700.0		--
0	GAMMA-SELINENE	Root	35.0	700.0		--
0	GAMMA-MUUROLENE	Rhizome Essent. Oil		9100.0		--
0	GAMMA-MUUROLENE	Rhizome	7.0	455.0	1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	GAMMA-EUDES MOL	Rhizome Essent. Oil		2300.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-EUDESOL	Rhizome	2.0	115.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	GAMMA-BISABOLENE	Rhizome Essent. Oil				--
22	GAMMA-AMINOBUTYRIC-ACID	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
22	GAMMA-AMINOBUTYRIC-ACID	Rhizome				--
4	GALANOLACTONE	Rhizome				--
4	GALANOLACTONE	Root				--
0	GADOLEIC-ACID	Root	70.0	380.0		USDA's Ag Handbook 8 and sequelae)
0	GADOLEIC-ACID	Rhizome	70.0	380.0	1.0	--
6	FURFURAL	Rhizome Essent. Oil				--
6	FURFURAL	Plant				--
0	FURANOGERMENE	Rhizome				--
8	FRUCTOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	FRUCTOSE	Rhizome				--
0	FLUORINE	Rhizome		2.0		--
0	FLUORINE	Root		2.0	1.3347186593784242	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	FLUORIDE	Rhizome		7.9	1.0	--
0	FIBER(DIETARY)	Root		242000.0	-1.7083639629745593	--
0	FIBER(CRUDE)	Root		171000.0	1.7664789948967667	--
15	FIBER	Rhizome	9000.0	171000.0	-0.07465068104411866	--
15	FIBER	Root	9000.0	171000.0	1.8408067359156413	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
61	FERULIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
0	FAT	Root	5040.0	72000.0	1.6380886391848568	--
0	FAT	Rhizome	7000.0	77000.0	0.7203322628500908	--
17	FARNESOL	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
17	FARNESOL	Rhizome				--
17	FARNESOL	Rhizome Essent. Oil				--
2	FARNESENE	Rhizome	245.0	4910.0		--
2	FARNESENE	Essential Oil				--
2	FARNESAL	Rhizome	1.0	100.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	FARNESAL	Rhizome Essent. Oil		2000.0		--
76	EUGENOL	Rhizome Essent. Oil				--
1	ETHYL-MYRISTATE	Rhizome Essent. Oil				--
1	ETHYL-MYRISTATE	Rhizome				--
0	ETHYL-ISOPROPYL-SULFIDE	Rhizome				--
0	ETHYL-ISOPROPYL-SULFIDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
6	ETHYL-ACETATE	Rhizome				--
6	ETHYL-ACETATE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	EO	Rhizome		10000.0	-0.5317116167359565	--
0	EO	Resin, Exudate, Sap		60000.0	-1.007598115442729	--
0	EO	Or	800.0	50000.0		--
0	EO	Root	700.0	30000.0	0.7582862013339499	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ELEMOL	Rhizome	3.0	190.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	ELEMOL	Rhizome Essent. Oil		3800.0		--
1	DODECANOIC-ACID	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	DODEC-TRANS-2-EN-1-AL	Rhizome				--
0	DIHYDROGINGEROL	Root Essent. Oil				--
0	DIHYDROGINGEROL	Rhizome				--
0	DIETHYLSULFIDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
0	DIETHYLSULFIDE	Rhizome				--
0	DEMETHYL-HEXAHYDROCURCUMIN	Rhizome				--
0	DEMETHYL-HEXAHYDROCURCUMIN	Root				--
0	DELTA-CAR-3-ENE	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	DELTA-CADINENE	Rhizome Essent. Oil		1300.0		--
9	DELTA-CADINENE	Rhizome	1.0	65.0	-0.6681865179092669	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	DELPHINIDIN	Plant				Stitt, Paul. Why George should eat broccoli.
0	DECYL-ALDEHYDE	Root				--
0	DECYL-ALDEHYDE	Rhizome				--
0	DECANAL	Plant	5.0	100.0	1.0	--
1	DECAN-1-AL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DEC-TRANS-2-EN-1-AL	Rhizome				--
4	D-BORNEOL	Rhizome	14.0	1102.0	1.0	--
4	D-BORNEOL	Root	14.0	1102.0		--
2	CYSTINE	Rhizome	80.0	462.0	-1.0	--
2	CYSTINE	Root	80.0	462.0	-0.8891832694867765	USDA's Ag Handbook 8 and sequelae)
13	CYSTEINE	Tuber				--
13	CYSTEINE	Shoot				--
5	CYANIN	Rhizome				--
135	CURCUMIN	Plant				Stitt, Paul. Why George should eat broccoli.
135	CURCUMIN	Rhizome				--
1	CUMENE	Rhizome		1.0		--
1	CUMENE	Root		1.0		--
12	COPPER	Rhizome	3.0	16.0	1.223047708525459	--
12	COPPER	Root	3.0	16.0	0.47378131766732856	--
2	COBALT	Rhizome	0.9	42.0	1.0	--
2	COBALT	Root	0.3	4.2	-0.454047411785451	--
2	CITRONELLYL-ACETATE	Rhizome				--
2	CITRONELLYL-ACETATE	Rhizome Essent. Oil				--
0	CITRONELLOL-ACETATE	Rhizome Essent. Oil				--
0	CITRONELLOL-ACETATE	Rhizome				--
15	CITRONELLOL	Rhizome Essent. Oil	3000.0	130000.0		--
15	CITRONELLOL	Rhizome	2.0	6500.0		--
20	CITRONELLAL	Rhizome Essent. Oil		2900.0		--
20	CITRONELLAL	Rhizome		10.0		--
53	CITRAL	Rhizome Essent. Oil		130000.0		--
53	CITRAL	Root	0.0	13500.0		--
53	CITRAL	Rhizome	0.0	13500.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	CIS-SESQUISABINENE-HYDRATE	Plant				--
0	CIS-SESQUISABINENE-HYDRATE	Rhizome				--
0	CIS-SESQUISABINENE-HYDRATE	Rhizome Essent. Oil				--
0	CIS-SESQUIABINENE-HYDRATE	Rhizome				--
0	CIS-SELINEN-4-OL	Rhizome				--
0	CIS-ROSE-OXIDE	Rhizome				--
0	CIS-NEROLIDOL	Rhizome Essent. Oil				--
0	CIS-HEXAN-3-OL	Rhizome Essent. Oil				--
0	CIS-HEXAN-3-OL	Rhizome				--
0	CIS-GERANIC-ACID	Rhizome				--
0	CIS-BETA-SESQUIPELLANDROL	Rhizome Essent. Oil				--
0	CIS-BETA-SESQUIPELLANDROL	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gokeikagaku Kaishi 61(9): 1119-1122.
0	CIS-8-SHOGOAL	Rhizome		40.0		--
0	CIS-8-SHOGAOL	Rhizome		40.0		--
0	CIS-6-SHOGOAL	Rhizome		40.0		--
0	CIS-3-(3-4-DIMETHOXY-PHENYL)-4-(TRANS-3-4-DIMETHOXY-STYRYL)-CYCLOHEXENE	Rhizome		50.6		--
0	CIS-12-SHOGOAL	Rhizome				--
0	CIS-12-SHOGAOL	Rhizome				--
0	CIS-10-SHOGOAL	Rhizome				--
0	CIS-10-SHOGAOL	Rhizome				--
0	CIS-1-2-BIS-(TRANS-3-4-DIMETHOXY-STYRYL)-CYCLOBUTANE	Rhizome		13.9		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CINEOLE	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CHRYSANTHEMIN	Rhizome				--
24	CHROMIUM	Root		0.6	-0.44035111981195524	--
24	CHROMIUM	Rhizome	6.0	20.0	1.0	--
77	CHLOROGENIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
3	CHAVICOL	Rhizome				--
3	CHAVICOL	Rhizome Essent. Oil				--
0	CEDOROL	Rhizome				--
0	CEDOROL	Rhizome Essent. Oil				--
31	CARYOPHYLLENE	Essential Oil				--
0	CARBOHYDRATES	Rhizome	92000.0	823240.0	0.675882053937855	--
0	CARBOHYDRATES	Root	47390.0	677000.0	-1.9641525828914683	--
0	CAR-3-ENE	Rhizome				--
0	CAR-3-ENE	Rhizome Essent. Oil				--
44	CAPSAICIN	Plant				Stitt, Paul. Why George should eat broccoli.
44	CAPSAICIN	Rhizome				--
5	CAPRYLIC-ACID	Rhizome	70.0	380.0		--
5	CAPRYLIC-ACID	Rhizome Essent. Oil				--
5	CAPRYLIC-ACID	Root	70.0	380.0		USDA's Ag Handbook 8 and sequelae)
3	CAPRIC-ACID	Root	1800.0	1980.0		USDA's Ag Handbook 8 and sequelae)
3	CAPRIC-ACID	Rhizome	1800.0	1980.0		--
41	CAMPHOR	Rhizome	1.0	60.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
41	CAMPHOR	Rhizome Essent. Oil		1200.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CAMPHENE-HYDRATE	Rhizome				--
0	CAMPHENE-HYDRATE	Rhizome Essent. Oil				--
9	CAMPHENE	Rhizome		3080.0	1.0	--
9	CAMPHENE	Essential Oil				--
9	CAMPHENE	Rhizome Essent. Oil		126000.0		--
2	CAMPESTEROL	Root	10.0	100.0	-0.2945736885682078	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
28	CALCIUM	Root	116.0	1650.0	-0.6300358799835268	--
28	CALCIUM	Rhizome	150.0	3458.0	-0.7549394061569589	--
0	CALAMENENE	Rhizome Essent. Oil				--
0	CALAMENEN	Rhizome				--
102	CAFFEIC-ACID	Rhizome				--
4	BORON	Rhizome	1.0	4.0		--
4	BORON	Root	1.0	4.0	-0.7413065903382969	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).
12	BORNYL-ACETATE	Rhizome	2.0	105.0		--
12	BORNYL-ACETATE	Root	2.0	105.0	-0.5636066792773037	--
0	BORNEOL-METHYL-ETHER	Rhizome				--
0	BORNEOL-ACETATE	Rhizome Essent. Oil		2100.0		--
35	BORNEOL	Rhizome Essent. Oil		18000.0		--
35	BORNEOL	Rhizome		180.0		--
0	BISABOLENE	Essential Oil				--
0	BISABOLENE	Root Essent. Oil				--
0	BISABOLENE	Root				--
0	BISABOLENE	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-ZINGIBERENE	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	BETA-THUJONE	Rhizome				--
5	BETA-THUJONE	Rhizome Essent. Oil				--
47	BETA-SITOSTEROL	Root	100.0	500.0	-0.26375908041164936	--
47	BETA-SITOSTEROL	Plant				--
0	BETA-SESQUIPHELLANDROL	Rhizome				--
5	BETA-SESQUIPHELLANDRENE	Root Essent. Oil				--
5	BETA-SESQUIPHELLANDRENE	Rhizome		460.0		--
5	BETA-SESQUIPHELLANDRENE	Rhizome Essent. Oil		43000.0		--
3	BETA-SELINENE	Rhizome				--
3	BETA-SELINENE	Rhizome Essent. Oil				--
2	BETA-SANTALOL	Rhizome Essent. Oil		162000.0		--
13	BETA-PINENE	Rhizome Essent. Oil		5300.0	1.248959633610851	--
13	BETA-PINENE	Rhizome		100.0	0.1867718419094071	--
3	BETA-PHELLANDRENE	Rhizome Essent. Oil	57000.0	106700.0		--
3	BETA-PHELLANDRENE	Rhizome	32.0	2850.0		--
2	BETA-MYRCENE	Rhizome Essent. Oil				--
2	BETA-MYRCENE	Rhizome		330.0		--
2	BETA-MYRCENE	Rf	2.0	950.0		--
13	BETA-IONONE	Rhizome Essent. Oil				--
13	BETA-IONONE	Rhizome				--
0	BETA-HIMACHALENE	Rhizome				--
0	BETA-HIMACHALENE	Rhizome Essent. Oil				--
0	BETA-FARNESENE	Root Essent. Oil				--
13	BETA-EUDESMOL	Rhizome	7.0	465.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	BETA-EUDESOL	Rhizome Essent. Oil		9300.0		--
5	BETA-ELEMENE	Rhizome Essent. Oil		3000.0		--
5	BETA-ELEMENE	Rhizome	2.0	500.0	0.26691736651361464	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-CARYOPHYLLENE	Rhizome Essent. Oil		900.0	-1.0	--
0	BETA-CARYOPHYLLENE	Rhizome	0.7	45.0	-1.0	--
53	BETA-CAROTENE	Rhizome	0.0	4.0	-0.6667259338283312	--
53	BETA-CAROTENE	Root	0.1	1.0	-0.43002798118623115	--
0	BETA-BISABOLOL	Rhizome	5.0	295.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-BISABOLOL	Rhizome Essent. Oil		5900.0		--
6	BETA-BISABOLENE	Rhizome	5.0	3600.0	-1.0	--
6	BETA-BISABOLENE	Rhizome Essent. Oil	25000.0	105100.0	1.0	--
24	BENZALDEHYDE	Rhizome				--
3	ASPARTIC-ACID	Shoot				--
3	ASPARTIC-ACID	Root	2080.0	11990.0	0.26543138626572105	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Rhizome	2080.0	11990.0	-1.0	--
3	ASPARTIC-ACID	Tuber				--
2	ASPARAGINE	Rhizome		500.0	-0.734470603058131	--
0	ASH	Root	2450.0	35000.0	-0.9297321702301228	--
0	ASH	Rhizome	7700.0	200000.0	1.829986028498204	--
112	ASCORBIC-ACID	Rhizome	0.0	317.0	-0.3087839350199982	--
112	ASCORBIC-ACID	Root	20.0	288.0	-0.48133996980232785	--
0	AROMADENDRINE	Rhizome				--
3	AROMADENDRENE	Rhizome Essent. Oil				--
14	ARGININE	Rhizome	430.0	2486.0	-1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	ARGININE	Tuber				--
14	ARGININE	Root	430.0	2486.0	-0.41425783754112155	USDA's Ag Handbook 8 and sequelae)
3	AR-CURCUMENE	Rhizome Essent. Oil		25000.0		--
3	AR-CURCUMENE	Rhizome	20.0	9520.0	1.0	--
3	AR-CURCUMENE	Root Essent. Oil				--
3	AR-CURCUMENE	Root				--
0	ANTI-METHYL-8-SHOGAOL	Rhizome				--
0	ANTI-METHYL-6-SHOGAOL	Rhizome				--
0	ANTI-METHYL-10-SHOGOAL	Rhizome				--
0	ANTI-METHYL-10-SHOGAOL	Rhizome				--
0	ANGELICOIDENOL-2-O-BETA-D-GLUCOPYRANOSIDE	Rhizome		14.0		--
5	ALUMINUM	Rhizome		663.0		--
5	ALUMINUM	Root	46.0	663.0	0.04325697966835661	--
1	ALPHA-ZINGIBERENE	Rhizome Essent. Oil		442600.0		--
1	ALPHA-ZINGIBERENE	Rhizome	74.0	4600.0	1.0	--
1	ALPHA-ZINGIBERENE	Rhizome		200.0	-1.0	--
0	ALPHA-YLANGENE	Rhizome				--
23	ALPHA-TERPINEOL	Rhizome Essent. Oil		10000.0		--
23	ALPHA-TERPINEOL	Rhizome	8.0	500.0	-0.26863716905966795	--
13	ALPHA-TERPINENE	Rhizome	0.5	35.0	1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
13	ALPHA-TERPINENE	Rhizome Essent. Oil		700.0		--
3	ALPHA-SELINENE	Rhizome				--
3	ALPHA-SELINENE	Rhizome Essent. Oil				--
28	ALPHA-PINENE	Rhizome		720.0	1.111167799007431	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Rhizome Essent. Oil		39000.0	1.392186073629917	--
11	ALPHA-PHELLANDRENE	Rhizome	3.0	200.0	-1.0	--
11	ALPHA-PHELLANDRENE	Rhizome Essent. Oil		4000.0		--
0	ALPHA-MUUROLENE	Rhizome				--
0	ALPHA-MUUROLENE	Rhizome Essent. Oil				--
15	ALPHA-LINOLENIC-ACID	Root	340.0	3190.0	1.9620665358845129	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Rhizome	340.0	3190.0		--
0	ALPHA-FARNESENE	Rhizome	20.0	1250.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-FARNESENE	Root Essent. Oil				--
0	ALPHA-FARNESENE	Rhizome Essent. Oil		25000.0		--
3	ALPHA-CURCUMENE	Rhizome Essent. Oil		19400.0		--
3	ALPHA-CURCUMENE	Rhizome		280.0		--
0	ALPHA-CUBEBENE	Rhizome Essent. Oil				--
0	ALPHA-COPAENE	Rhizome Essent. Oil				--
0	ALPHA-COPAENE	Rhizome				--
0	ALPHA-CEDROL	Rhizome Essent. Oil				--
3	ALPHA-CADINOL	Rhizome Essent. Oil				--
3	ALPHA-CADINOL	Rhizome				--
0	ALPHA-CADINENE	Rhizome Essent. Oil				--
0	ALPHA-CADINENE	Rhizome				--
0	ALLO-AROMADENDRINE	Rhizome	1.0	70.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALLO-AROMADENDRENE	Rhizome Essent. Oil		1400.0		--
0	ALBUMIN	Rhizome	4984.0	45924.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALBUMIN	Root	4984.0	45924.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ALANINE	Rhizome	310.0	1793.0	-1.0	--
3	ALANINE	Root	310.0	1793.0	-0.8118285216311718	USDA's Ag Handbook 8 and sequelae)
0	AFRAMODIAL	Seed		400.0	1.0	--
3	ACETONE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
3	ACETONE	Rhizome				--
16	ACETIC-ACID	Rhizome				--
16	ACETIC-ACID	Rhizome Essent. Oil				--
6	ACETALDEHYDE	Essential Oil				Kameoka, H. and Nakai, K. 1987. Components of essential oil from the root of Glycyrrhiza-glabra. Nippon Gogeikagaku Kaishi 61(9): 1119-1122.
6	ACETALDEHYDE	Rhizome				--
2	9-OXO-NEROLIDOL	Rhizome				--
2	9-OXO-NEROLIDOL	Rhizome Essent. Oil				--
0	9-GINGEROL	Rhizome				--
2	8-SHOGAOL	Rhizome	48.0	130.0		--
5	8-GINGEROL	Root				--
5	8-GINGEROL	Rhizome Essent. Oil				--
5	8-GINGEROL	Rhizome	110.0	1069.0		--
0	8-GINGEDIOL	Rhizome				--
1	8-BETA-17-EPOXY-LABD-TRANS-12-ENE-15,16-DIAL	Rhizome		400.0		--
0	7-GINGEROL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	7-(3-4-DIHYDROXY-PHENYL)-1-(4-HYDROXY-3-METHOXY-PHENYL)-HEPT-4-EN-3-ONE	Rhizome		1.4		--
32	6-SHOGAOL	Rhizome	40.0	330.0		--
0	6-PARADOL	Rhizome		9.0		--
0	6-METHYLGINGEDIOL	Rhizome				--
0	6-METHYLGINGEDIOL	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
0	6-METHYLGINGEDIACETATE	Rhizome				--
0	6-METHYLGINGEDIACETATE	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
0	6-METHYL-HEPT-5-EN-2-ONE	Rhizome Essent. Oil				--
0	6-METHYL-HEPT-5-EN-2-ONE	Rhizome	2.0	50.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	6-METHYL-HEPT-5-EN-2-OL	Rhizome				--
1	6-GINGESULFONIC-ACID	Rhizome		13.0		--
28	6-GINGEROL	Rhizome Essent. Oil				--
28	6-GINGEROL	Root Essent. Oil				--
28	6-GINGEROL	Root				--
28	6-GINGEROL	Rhizome	130.0	7138.0		--
28	6-GINGEROL	Essential Oil				--
2	6-GINGERDIONE	Rhizome	3.3	10.0		--
1	6-GINGERDIOL	Rhizome				--
0	6-GINGEDIOL-METHYL-ETHER	Rhizome				--
0	6-GINGEDIOL-DIACETATE-METHYL-ETHER	Rhizome				--
0	6-GINGEDIOL-DIACETATE	Rhizome		3.3		--
0	6-GINGEDIOL-ACETATE-METHYL-ETHER	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	6-GINGEDIOL-ACETATE	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	6-GINGEDIOL	Rhizome	21.0	30.0		--
0	6-DIHYDROGINGERDIONE	Rhizome				--
2	6-DEHYDROGINGERDIONE	Rhizome				--
0	6-10-GINGERDIONE	Root				--
0	6,10-DEHYDROGINGERDIONE	Root				--
0	6,10-DEHYDROGINGERDIONE	Rhizome				--
0	5-O-BETA-D-GLUCOPYRANOSYL-3-HYDROXY-1-(4-HYDROXYPHENYL)-DECANE	Rhizome		3.0		--
0	5-HYDROXY-7-(4-HYDROXY-PHENYL)-1-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTAN-3-ONE	Rhizome		2.09		--
0	5-HYDROXY-7-(4-HYDROXY-3-5-DIMETHOXY-PHENYL)-1-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTAN-3-ONE	Rhizome		0.52		--
0	5-HYDROXY-1-(4-HYDROXY-3-5-DIMETHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTAN-3-ONE	Rhizome		0.52		--
0	5(S)-ACETOXY-3(R)-HYDROXY-1-(4-HYDROXY-3-METHOXY-PHENYL)-DECANE	Rhizome		15.8		--
0	5(S)-3(R)-DIHYDROXY-1-(4-HYDROXY-3-METHOXY-PHENYL)-DECANE	Rhizome		53.1		--
8	4-TERPINEOL	Rhizome				--
0	4-PHENYL-BENZALDEHYDE	Rhizome Essent. Oil				--
0	4-PHENYL-BENZALDEHYDE	Rhizome				--
0	4-GINGEROL	Rhizome Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-GINGEROL	Rhizome				--
0	3-PHENYL-BENZALDEHYDE	Rhizome Essent. Oil				--
0	3-PHENYL-BENZALDEHYDE	Rhizome				--
0	3-EPIACETOXY-1,5-EPOXY-1-(3,4-DIHYDROXY-5-METHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome				--
0	3-ACETOXY-1,5-EPOXY-1-(3,4-DIHYDROXY-5-METHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome				--
0	3-7-DIMETHYL-OCTA-3-TRANS-6-DIEN-1-AL	Rhizome				--
0	3-7-DIMETHYL-OCTA-3-CIS-6-DIEN-1-AL	Rhizome				--
0	3-6-EPOXY-1-(4-HYDROXY-3-METHOXY-PHENYL)-DECA-3-5-DIENE	Rhizome				--
0	3-5-DIACETOXY-7-(3-4-DIHYDROXY-PHENYL)-1-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome		3.5		--
0	3-5-DIACETOXY-1-(4-HYDROXY-3-5-DIMETHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome		30.3		--
0	3(S)-5(S)-DIHYDROXY-1-7-BIS-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome		5.3		--
0	3(S)-5(S)-DIHYDROXY-1-(4'-HYDROXY-3'-5'-DIMETHOXY-PHENYL)-7-(4'-HYDROXY-3'-METHOXY-PHENYL)-HEPTANE	Rhizome		2.0		--
0	3(S)-5(S)-DIACETOXY-1-7-BIS-(3-4-DIHYDROXY-PHENYL)-HEPTANE	Rhizome		15.7		--
0	3(S)-5(S)-DIACETOXY-1-(4'-HYDROXY-3'-5'-DIMETHOXY-PHENYL)-7-(4'-HYDROXY-3'-METHOXY-PHENYL)-HEPTANE	Rhizome		20.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	3(R)-ACETOXY-5(S)-DHYDROXY-1-(4-HYDROXY-3-METHOXY-PHENYL)-DECANE	Rhizome		15.8		--
0	3(R)-5(S)-DIACETOXY-1-(4-HYDROXY-3-METHOXY-PHENYL)-DECANE	Rhizome		41.8		--
0	3(R)-5(S)-DIACETOXY-1-(3-4-DIMETHOXY-PHENYL)-DECANE	Rhizome		14.9		--
0	2-6-DIMETHYL-OCTA-3-7-DIENE-1-6-DIOL	Rhizome				--
0	2-6-DIMETHYL-OCTA-2-6-DIENE-1-8-DIOL	Rhizome				--
0	2-6-DIMETHYL-HEPT-5-EN-1-AL	Rhizome				--
0	2-(3'-METHYL-2'-BUTENYL)-3-METHYL-FURAN	Rhizome				--
0	2-(2'-3'-EPOXY-3-METHYL-BUTYL)-3-METHYL-FURAN	Rhizome				--
0	2,2,4-TRIMETHYL-HEPTANE	Rhizome Essent. Oil				--
0	2,2,4-TRIMETHYL-HEPTANE	Rhizome				--
0	2(R)-5(S)-DIHYDROXY-1-7-BIS-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome		5.6		--
0	16-GINGEROL	Rhizome				--
0	14-GINGEROL	Rhizome				--
0	12-GINGEROL	Rhizome				--
0	12-GINGEDIOL	Rhizome				--
0	10-SHOGOAL	Rhizome				--
0	10-SHOGAOL	Rhizome		74.0		--
3	10-GINGEROL	Rhizome	2.6	1862.0		--
3	10-GINGEROL	Root				--
2	10-GINGERDIONE	Rhizome		11.0		--
2	10-GINGERDIONE	Root				--
0	10-GINGEDIOL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	10-EPIZONARENE	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	10-DIHYDROGINGERDIONE	Rhizome		6.3		--
3	10-DEHYDROGINGERDIONE	Rhizome				--
0	1-7-BIS-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE-3(S)-DIOL	Rhizome		4.0		--
0	1-(4-O-BETA-D-GLUCOPYRANOSYL-3-METHOXYPHENYL)-3,5-DIHYDROXYDECANE	Rhizome		2.0		--
0	1-(4-HYDROXY-3-METHOXYPHENYL)-3,5-OCTANEDIOL	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
0	1-(4-HYDROXY-3-METHOXYPHENYL)-3,5-OCTANEDIOL	Rhizome				--
0	1-(4-HYDROXY-3-METHOXYPHENYL)-3,5-DIACETOXYOCTANE	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
0	1-(4-HYDROXY-3-METHOXYPHENYL)-3,5-DIACETOXYOCTANE	Rhizome				--
67	1,8-CINEOLE	Rhizome Essent. Oil	26000.0	100000.0		--
67	1,8-CINEOLE	Rhizome		490.0	-0.7528854377140122	--
0	1,5-EPOXY-3-HYDROXY-1-(4-HYDROXY-3,5-DIMETHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome				--
0	1,5-EPOXY-3-HYDROXY-1-(3,4-DIHYDROXY-5-METHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome				--
0	1,5-EPOXY-3-EPIHYDROXY-1-(3,4-DIHYDROXY-5-METHOXY-PHENYL)-7-(4-HYDROXY-3-METHOXY-PHENYL)-HEPTANE	Rhizome				--
0	(+)-BORNEOL	Rhizome Essent. Oil				--
0	(+)-BETA-PHELLANDRENE	Essential Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	(+)-ANGELICOIDENOL	Rhizome		14.0		--
0	(+)-ALPHA-CURCUMENE	Essential Oil				--
0	(+)-6-GINGEROL	Root				--