

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Zingiber officinale*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	OLEIC-ACID	Root	1190.0	11000.0	3.056426676222409	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Root	1200.0	11220.0	3.017959618154365	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Root	170.0	1540.0	2.8114380671291452	USDA's Ag Handbook 8 and sequelae)
9	OXALIC-ACID	Root		5000.0	2.5415261372448525	--
13	MUFA	Root	1540.0	8400.0	2.513577974996003	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Root	340.0	3190.0	1.9620665358845129	USDA's Ag Handbook 8 and sequelae)
15	FIBER	Root	9000.0	171000.0	1.8408067359156413	--
3	NICKEL	Root	2.0	5.2	1.752676229894103	--
6	MYRISTIC-ACID	Root	180.0	1650.0	1.7305384293651185	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Rhizome	106.0	350.0	1.4980699854714286	--
7	LAURIC-ACID	Root	390.0	3630.0	1.4134619657773633	USDA's Ag Handbook 8 and sequelae)
60	LIMONENE	Rhizome Essent. Oil		21000.0	1.411888259893775	--
28	ALPHA-PINENE	Rhizome Essent. Oil		39000.0	1.392186073629917	--
14	POTASSIUM	Rhizome	2640.0	25079.0	1.345332062692374	--
4	PUFA	Root	1540.0	8400.0	1.333787882042874	USDA's Ag Handbook 8 and sequelae)
13	BETA-PINENE	Rhizome Essent. Oil		5300.0	1.248959633610851	--
12	COPPER	Rhizome	3.0	16.0	1.223047708525459	--
5	STARCH	Root	35000.0	600000.0	1.18913249334548	--
28	ALPHA-PINENE	Rhizome		720.0	1.111167799007431	--
65	MAGNESIUM	Rhizome	430.0	2690.0	1.0779788333953992	--
39	NIACIN	Rhizome	5.0	135.0	1.0692722579935732	--
6	BETA-BISABOLENE	Rhizome Essent. Oil	25000.0	105100.0	1.0	--
3	ISOLEUCINE	Rhizome	510.0	2926.0	1.0	--
24	CHROMIUM	Rhizome	6.0	20.0	1.0	--
4	D-BORNEOL	Rhizome	14.0	1102.0	1.0	--
3	FLUORIDE	Rhizome		7.9	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
41	CAMPHOR	Rhizome Essent. Oil		1200.0	1.0	--
18	OLEIC-ACID	Rhizome	1190.0	11000.0	1.0	--
3	AR-CURCUMENE	Rhizome	20.0	9520.0	1.0	--
7	PHENYLALANINE	Rhizome	450.0	2455.0	1.0	--
27	LINOLEIC-ACID	Rhizome	1200.0	11220.0	1.0	--
3	NICKEL	Rhizome	2.0	5.2	1.0	--
11	GAMMA-TERPINENE	Rhizome		1230.0	1.0	--
2	COBALT	Rhizome	0.9	42.0	1.0	--
2	LEUCINE	Rhizome	740.0	4257.0	1.0	--
8	STEARIC-ACID	Rhizome	170.0	1540.0	1.0	--
53	LINALOOL	Rhizome Essent. Oil	3200.0	30000.0	1.0	--
13	MUFA	Rhizome	1540.0	8400.0	1.0	--
1	ALPHA-ZINGIBERENE	Rhizome	74.0	4600.0	1.0	--
3	VALINE	Rhizome	730.0	4202.0	1.0	--
13	BETA-EUDES MOL	Rhizome	7.0	465.0	1.0	--
8	GLUTAMIC-ACID	Rhizome	1620.0	9328.0	1.0	--
2	PALMITOLEIC-ACID	Rhizome	210.0	1145.0	1.0	--
4	PUFA	Rhizome	1540.0	8400.0	1.0	--
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.
9	CAMP HENE	Rhizome		3080.0	1.0	--
13	PALMITIC-ACID	Rhizome	1200.0	11220.0	1.0	--
60	LIMONENE	Rhizome	17.0	1050.0	0.6650265305559545	--
12	COPPER	Root	3.0	16.0	0.47378131766732856	--
4	PHOSPHORUS	Rhizome	320.0	5323.0	0.4586280406131061	--
5	STARCH	Rhizome	123000.0	500000.0	0.41680828464384206	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.)
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.
3	ASPARTIC-ACID	Root	2080.0	11990.0	0.26543138626572105	USDA's Ag Handbook 8 and sequelae)
14	POTASSIUM	Root	1323.0	18900.0	0.22854620707535842	--
1	SODIUM	Rhizome	60.0	709.0	0.18755999323325184	--
13	BETA-PINENE	Rhizome		100.0	0.1867718419094071	--
7	SALICYLATES	Root	45.0	250.0	0.1478264757482174	--
13	PALMITIC-ACID	Root	1200.0	11220.0	0.13536149219761523	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Root	730.0	4202.0	0.07599207749422336	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Root	188.0	2690.0	0.0683510412136399	--
2	PALMITOLEIC-ACID	Root	210.0	1145.0	0.05724502554235483	USDA's Ag Handbook 8 and sequelae)
5	ALUMINUM	Root	46.0	663.0	0.04325697966835661	--
39	NIACIN	Root	3.6	51.0	0.0220587467388613	--
2	PHYTOSTEROLS	Root	150.0	913.0	0.021969609312565776	USDA's Ag Handbook 8 and sequelae)
7	HISTIDINE	Root	300.0	1738.0	-0.05270016889774364	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Root	740.0	4257.0	-0.0564322869347267	USDA's Ag Handbook 8 and sequelae)
15	FIBER	Rhizome	9000.0	171000.0	-0.07465068104411866	--
15	RIBOFLAVIN	Rhizome	0.0	5.0	-0.10465353747473792	--
14	MANGANESE	Root	2.4	33.8	-0.14226990626562633	--
4	PHOSPHORUS	Root	181.0	2580.0	-0.1647701538167895	--
77	ZINC	Rhizome		57.0	-0.18700695320743768	--
4	SILICON	Root	2.0	28.5	-0.2119845357116175	--
15	RIBOFLAVIN	Root	0.2	3.1	-0.21327168080429257	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	GLYCINE	Root	430.0	2486.0	-0.22589147640123697	USDA's Ag Handbook 8 and sequelae)
47	BETA-SITOSTEROL	Root	100.0	500.0	-0.26375908041164936	--
23	ALPHA-TERPINEOL	Rhizome	8.0	500.0	-0.26863716905966795	--
3	ISOLEUCINE	Root	510.0	2926.0	-0.2833451886291646	USDA's Ag Handbook 8 and sequelae)
60	SELENIUM	Root	0.1	1.0	-0.29131634494743897	--
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.)
112	ASCORBIC-ACID	Rhizome	0.0	317.0	-0.3087839350199982	--
1	SODIUM	Root	30.0	423.0	-0.31581734202184225	--
31	THIAMIN	Root	0.0	3.0	-0.32687193108858614	--
7	PHENYLALANINE	Root	450.0	2455.0	-0.39322284344633335	USDA's Ag Handbook 8 and sequelae)
14	ARGININE	Root	430.0	2486.0	-0.41425783754112155	USDA's Ag Handbook 8 and sequelae)
6	IRON	Root	1.1	15.0	-0.4198613477374219	--
53	BETA-CAROTENE	Root	0.1	1.0	-0.43002798118623115	--
1	SERINE	Root	450.0	2596.0	-0.4317372218630029	USDA's Ag Handbook 8 and sequelae)
24	CHROMIUM	Root		0.6	-0.44035111981195524	--
2	COBALT	Root	0.3	4.2	-0.454047411785451	--
16	P-CYMENE	Rhizome		90.0	-0.47413848530364283	--
112	ASCORBIC-ACID	Root	20.0	288.0	-0.48133996980232785	--
29	TRYPTOPHAN	Root	120.0	693.0	-0.48600202664790343	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Root	360.0	2057.0	-0.4948266685368329	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Root	1620.0	9328.0	-0.49975515668744586	USDA's Ag Handbook 8 and sequelae)
12	BORNYL-ACETATE	Root	2.0	105.0	-0.5636066792773037	--
4	LYSINE	Root	570.0	3110.0	-0.5755610272389462	USDA's Ag Handbook 8 and sequelae)
15	METHIONINE	Root	130.0	737.0	-0.5917219440063812	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	IRON	Rhizome	4.0	162.0	-0.5945282624931012	--
28	CALCIUM	Root	116.0	1650.0	-0.6300358799835268	--
53	BETA-CAROTENE	Rhizome	0.0	4.0	-0.6667259338283312	--
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.
2	ASPARAGINE	Rhizome		500.0	-0.734470603058131	--
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).
67	1,8-CINEOLE	Rhizome		490.0	-0.7528854377140122	--
28	CALCIUM	Rhizome	150.0	3458.0	-0.7549394061569589	--
3	ALANINE	Root	310.0	1793.0	-0.8118285216311718	USDA's Ag Handbook 8 and sequelae)
2	CYSTINE	Root	80.0	462.0	-0.8891832694867765	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Root	2.0	11.0	-0.9376231626080279	USDA's Ag Handbook 8 and sequelae)
31	THIAMIN	Rhizome	0.0	3.0	-0.9831353843426084	--
2	TRANS-BETA-FARNESENE	Rhizome	1.0	1200.0	-1.0	--
6	BETA-BISABOLENE	Rhizome	5.0	3600.0	-1.0	--
22	MYRCENE	Rhizome Essent. Oil		19000.0	-1.0	--
3	ASPARTIC-ACID	Rhizome	2080.0	11990.0	-1.0	--
15	METHIONINE	Rhizome	130.0	737.0	-1.0	--
6	ZINGIBERENE	Rhizome	0.5	600.0	-1.0	--
4	THREONINE	Rhizome	360.0	2057.0	-1.0	--
2	CYSTINE	Rhizome	80.0	462.0	-1.0	--
25	P-COUMARIC-ACID	Rhizome		19.0	-1.0	--
11	ALPHA-PHELLANDRENE	Rhizome	3.0	200.0	-1.0	--
1	SERINE	Rhizome	450.0	2596.0	-1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MYRISTIC-ACID	Rhizome	180.0	1650.0	-1.0	--
14	ARGININE	Rhizome	430.0	2486.0	-1.0	--
4	LYSINE	Rhizome	570.0	3110.0	-1.0	--
7	HISTIDINE	Rhizome	300.0	1738.0	-1.0	--
22	MYRCENE	Rhizome	2.0	950.0	-1.0	--
3	ALANINE	Rhizome	310.0	1793.0	-1.0	--
12	GLYCINE	Rhizome	430.0	2486.0	-1.0	--
1	ALPHA-ZINGIBERENE	Rhizome		200.0	-1.0	--
8	TYROSINE	Rhizome	200.0	1122.0	-1.0	--
53	LINALOOL	Rhizome		50.0	-1.0	--
29	TRYPTOPHAN	Rhizome	120.0	693.0	-1.0	--
8	TYROSINE	Root	200.0	1122.0	-1.4340366854424644	USDA's Ag Handbook 8 and sequelae)
4	TIN	Root	0.1	1.3	-1.5436732662398835	--
2	GINGERENONE-C	Rhizome		14.2		--
5	BETA-THUJONE	Rhizome				--
53	CITRAL	Rhizome Essent. Oil		130000.0		--
11	PERILLALDEHYDE	Rhizome Essent. Oil				--
2	9-OXO-NEROLIDOL	Rhizome				--
3	ISOLEUCINE	Tuber				--
2	PROPIONALDEHYDE	Rhizome				--
1	N-HEPTANE	Rhizome				--
9	DELPHINIDIN	Plant				Stitt, Paul. Why George should eat broccoli.
22	GAMMA-AMINOBUTYRIC-ACID	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	GALANOLACTONE	Root				--

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.
23	ALPHA-TERPINEOL	Rhizome Essent. Oil		10000.0		--
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.
14	SHIKIMIC-ACID	Leaf				--
27	GINGEROL	Root				--
2	ELEMOL	Rhizome Essent. Oil		3800.0		--
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.
61	FERULIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
3	ALPHA-SELINENE	Rhizome				--
2	ZINGIBERONE	Rhizome	0.3	400.0		--
13	P-HYDROXY-BENZOIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
1	DECAN-1-AL	Rhizome				--
4	THREONINE	Tuber				--
47	BETA-SITOSTEROL	Plant				--
3	CHAVICOL	Rhizome Essent. Oil				--
4	PATCHOULI-ALCOHOL	Rhizome Essent. Oil				--
2	8-SHOGAOL	Rhizome	48.0	130.0		--
4	TIN	Rhizome		13.0		--
13	BETA-IONONE	Rhizome Essent. Oil				--
27	GINGEROL	Root Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	N-DECANAL	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.
2	GINGERENONE-B	Rhizome		4.7		--
1	ZINGIBAIN	Root				Abstract (See species file)
6	FURFURAL	Rhizome Essent. Oil				--
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.
24	BENZALDEHYDE	Rhizome				--
13	ALPHA-TERPINENE	Rhizome Essent. Oil		700.0		--
2	ISOGINGERENONE-B	Rhizome		4.7		--
77	CHLOROGENIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
13	CYSTEINE	Tuber				--
9	TERPINOLENE	Rhizome Essent. Oil		1800.0		--
2	BETA-MYRCENE	Rhizome Essent. Oil				--
5	BETA-SESQUIPELLANDRENE	Rhizome		460.0		--
44	CAPSAICIN	Rhizome				--
5	8-GINGEROL	Rhizome	110.0	1069.0		--
3	GUAJOL	Rhizome Essent. Oil				--
3	AR-CURCUMENE	Root Essent. Oil				--
1	N-BUTYRALDEHYDE	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	GINGERENONE-A	Rhizome	118.0	136.0		--
4	D-BORNEOL	Root	14.0	1102.0		--
3	ASPARTIC-ACID	Tuber				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ALPHA-SELINENE	Rhizome Essent. Oil				--
2	PIPECOLIC-ACID	Rhizome		320.0		--
3	CHAVICOL	Rhizome				--
13	CYSTEINE	Shoot				--
23	TERPINEN-4-OL	Rhizome Essent. Oil				--
1	ZINGIBAIN	Rhizome				--
2	BETA-MYRCENE	Rhizome		330.0		--
2	HUMULENE	Root				--
3	BETA-SELINENE	Rhizome				--
5	CAPRYLIC-ACID	Rhizome Essent. Oil				--
1	ISOVALERALDEHYDE	Rhizome				--
1	8-BETA-17-EPOXY-LABD-TRANS-12-ENE-15,16-DIAL	Rhizome		400.0		--
12	GLYCINE	Tuber				--
3	AR-CURCUMENE	Root				--
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.
5	GERANYL-ACETATE	Rhizome				--
135	CURCUMIN	Plant				Stitt, Paul. Why George should eat broccoli.
17	FARNESOL	Rhizome Essent. Oil				--
2	ZINGIBERONE	Rhizome Essent. Oil				--
3	ASPARTIC-ACID	Shoot				--
2	PHYTOSTEROLS	Rhizome	150.0	913.0		--
9	OXALIC-ACID	Rhizome		5000.0		--
2	HUMULENE	Rhizome				--
44	CAPSAICIN	Plant				Stitt, Paul. Why George should eat broccoli.
5	BETA-ELEMENE	Rhizome Essent. Oil		3000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	SHOGAOL	Essential Oil				--
15	ALPHA-LINOLENIC-ACID	Rhizome	340.0	3190.0		--
13	ZINGERONE	Rhizome				--
2	9-OXO-NEROLIDOL	Rhizome Essent. Oil				--
1	ALPHA-ZINGIBERENE	Rhizome Essent. Oil		442600.0		--
17	FARNESOL	Rhizome				--
1	CUMENE	Root		1.0		--
27	GINGEROL	Rhizome				--
7	GLUCOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	AR-CURCUMENE	Rhizome Essent. Oil		25000.0		--
11	GAMMA-TERPINENE	Rhizome Essent. Oil		500.0		--
32	6-SHOGAOL	Rhizome	40.0	330.0		--
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.
12	GLYCINE	Shoot				--
16	P-CYMENE	Rhizome Essent. Oil		26000.0		--
35	GERANIOL	Rhizome	2.0	345.0		--
1	CUMENE	Rhizome		1.0		--
2	FARNESENE	Essential Oil				--
6	ZINGIBERENE	Essential Oil				--
3	AROMADENDRENE	Rhizome Essent. Oil				--
11	ALPHA-PHELLANDRENE	Rhizome Essent. Oil		4000.0		--
5	CAPRYLIC-ACID	Rhizome	70.0	380.0		--
2	HEXAHYDROCURCUMIN	Rhizome Essent. Oil				--
18	SHOGAOL	Rhizome Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ALPHA-CURCUMENE	Rhizome		280.0		--
3	METHYL-NONYL-KETONE	Rhizome Essent. Oil				--
6	ZINGIBERENE	Rhizome Essent. Oil				--
2	FARNESENE	Rhizome	245.0	4910.0		--
3	10-GINGEROL	Root				--
9	CAMPHENE	Essential Oil				--
3	BETA-PHELLANDRENE	Rhizome	32.0	2850.0		--
3	ALPHA-CURCUMENE	Rhizome Essent. Oil		19400.0		--
5	BETA-THUJONE	Rhizome Essent. Oil				--
60	SELENIUM	Rhizome				--
28	6-GINGEROL	Rhizome	130.0	7138.0		--
23	TERPINEN-4-OL	Rhizome				--
5	8-GINGEROL	Rhizome Essent. Oil				--
7	ISOBORNEOL	Rhizome				--
34	MYRICETIN	Plant				Stitt, Paul. Why George should eat broccoli.
13	GERANIAL	Rhizome		980.0		--
2	FARNESAL	Rhizome Essent. Oil		2000.0		--
6	ZINGIBERENE	Root Essent. Oil				--
14	ARGININE	Tuber				--
8	4-TERPINEOL	Rhizome				--
3	HEXANOL	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	CAPRIC-ACID	Rhizome	1800.0	1980.0		--
5	CYANIN	Rhizome				--
18	SHOGAOL	Root Essent. Oil				--
3	ALPHA-CADINOL	Rhizome				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	VANILLIN	Plant				Stitt, Paul. Why George should eat broccoli.
3	METHYL-ACETATE	Rhizome				--
4	THREONINE	Shoot				--
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.
16	ISOEUGENOL	Rhizome				--
9	CAMPHENE	Rhizome Essent. Oil		126000.0		--
2	BETA-MYRCENE	Rf	2.0	950.0		--
67	1,8-CINEOLE	Rhizome Essent. Oil	26000.0	100000.0		--
5	BETA-SESQUIPELLANDRENE	Rhizome Essent. Oil		43000.0		--
5	SABINENE	Rhizome		20.0		--
2	6-GINGERDIONE	Rhizome	3.3	10.0		--
14	SUCROSE	Rhizome				--
1	6-GINGESULFONIC-ACID	Rhizome		13.0		--
22	MYRCENE	Rf	2.0	950.0		--
76	EUGENOL	Rhizome Essent. Oil				--
13	ZINGERONE	Essential Oil				--
5	ALUMINUM	Rhizome		663.0		--
11	NEROLIDOL	Rhizome Essent. Oil				--
4	PATCHOULI-ALCOHOL	Rhizome				--
2	HEXAHYDROCURCUMIN	Rhizome	21.3	25.1		--
135	CURCUMIN	Rhizome				--
18	SHOGAOL	Root				--
24	VANILLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
77	ZINC	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
5	BETA-SESQUIPHELLANDRENE	Root Essent. Oil				--
1	ETHYL-MYRISTATE	Rhizome				--
5	GERANYL-ACETATE	Rhizome Essent. Oil				--
35	BORNEOL	Rhizome		180.0		--
13	BETA-IONONE	Rhizome				--
1	N-BUTYRALDEHYDE	Rhizome				--
3	BETA-SELINENE	Rhizome Essent. Oil				--
2	6-DEHYDROGINGERDIONE	Rhizome				--
28	6-GINGEROL	Rhizome Essent. Oil				--
22	GAMMA-AMINOBUTYRIC-ACID	Rhizome				--
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.
3	ALPHA-CADINOL	Rhizome Essent. Oil				--
11	NEROLIDOL	Rhizome		60.0		--
3	PARADOL	Rhizome				--
20	LECITHIN	Rhizome				--
2	CITRONELLYL-ACETATE	Rhizome				--
1	ETHYL-MYRISTATE	Rhizome Essent. Oil				--
13	ZINGERONE	Root Essent. Oil				--
102	CAFFEIC-ACID	Rhizome				--
2	CITRONELLYL-ACETATE	Rhizome Essent. Oil				--
1	SERINE	Tuber				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ACETONE	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.
2	LEUCINE	Tuber				--
5	8-GINGEROL	Root				--
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.
6	ETHYL-ACETATE	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.
8	FRUCTOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
35	GERANIOL	Rhizome Essent. Oil		6900.0		--
35	BORNEOL	Rhizome Essent. Oil		18000.0		--
5	CAPRYLIC-ACID	Root	70.0	380.0		USDA's Ag Handbook 8 and sequelae)
7	ISOBORNEOL	Rhizome Essent. Oil				--
2	BETA-SANTALOL	Rhizome Essent. Oil		162000.0		--
1	RAFFINOSE	Rhizome				--
3	10-GINGEROL	Rhizome	2.6	1862.0		--
20	LECITHIN	Root				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
28	6-GINGEROL	Root Essent. Oil				--
53	LINALOOL	Root Essent. Oil				--
3	METHYL-NONYL-KETONE	Rhizome				--
6	FURFURAL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
31	CARYOPHYLLENE	Essential Oil				--
3	ACETONE	Rhizome				--
10	NEROL	Rhizome Essent. Oil				--
11	PANTOTHENIC-ACID	Rhizome	2.0	11.0		--
7	LAURIC-ACID	Rhizome	390.0	3630.0		--
15	CITRONELLOL	Rhizome	2.0	6500.0		--
6	ETHYL-ACETATE	Rhizome				--
13	ZINGERONE	Rhizome Essent. Oil				--
4	BORON	Rhizome	1.0	4.0		--
15	CITRONELLOL	Rhizome Essent. Oil	3000.0	130000.0		--
1	SERINE	Shoot				--
16	ACETIC-ACID	Rhizome				--
7	LAURIC-ACID	Rhizome Essent. Oil		900.0		--
2	10-GINGERDIONE	Root				--
10	NEROL	Rhizome				--
1	DODECANOIC-ACID	Rhizome				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
17	FARNESOL	Root				Chemical Constituents of Oriental Herbs (3 diff. books)
13	GERANIAL	Rhizome Essent. Oil	159000.0	400000.0		--
3	CAPRIC-ACID	Root	1800.0	1980.0		USDA's Ag Handbook 8 and sequelae)
2	GAMMA-BISABOLENE	Rhizome Essent. Oil				--
176	QUERCETIN	Plant				Stitt, Paul. Why George should eat broccoli.
2	10-GINGERDIONE	Rhizome		11.0		--
28	6-GINGEROL	Root				--
2	METHYL-ISOBUTYL-KETONE	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Rhizome				--
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.
16	ACETIC-ACID	Rhizome Essent. Oil				--
4	NERAL	Rhizome Essent. Oil	81000.0	260000.0		--
75	KAEMPFEROL	Plant				Stitt, Paul. Why George should eat broccoli.
20	CITRONELLAL	Rhizome		10.0		--
13	BETA-EUDES MOL	Rhizome Essent. Oil		9300.0		--
3	VALINE	Tuber				--
7	GLUCOSE	Rhizome				--
12	BORNYL-ACETATE	Rhizome	2.0	105.0		--
20	CITRONELLAL	Rhizome Essent. Oil		2900.0		--
5	SABINENE	Rhizome Essent. Oil		700.0		--
6	ACETALDEHYDE	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.
14	SUCROSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	LABDA-TRANS-8(17)-12-DIENE-15-16-DIAL	Rhizome				--
18	SHOGAOL	Rhizome				--
4	NERAL	Rhizome		410.0		--
53	CITRAL	Root	0.0	13500.0		--
4	GALANOLACTONE	Rhizome				--
9	DELTA-CADINENE	Rhizome Essent. Oil		1300.0		--
3	BETA-PHELLANDRENE	Rhizome Essent. Oil	57000.0	106700.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	10-DEHYDROGINGERDIONE	Rhizome				--
4	SILICON	Rhizome		285.0		--
28	6-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.
6	ACETALDEHYDE	Rhizome				--
5	MYRTENAL	Rhizome Essent. Oil		600.0		--
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.
53	CITRAL	Rhizome	0.0	13500.0		--
1	RAFFINOSE	Root				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	6-GINGERDIOL	Rhizome				--
3	VALINE	Shoot				--