

**Dr. Duke's Phytochemical and Ethnobotanical Database**

**Chemicals Found in *Allium sativum* var. *sativum***

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	(-)-N-(1'-DEOXY-1'-D-FRUCTOPYRANOSYL)-S-ALLYL-L-CYSTEINE-SULFOXIDE	Bulb	--	--		
1	2-PROPENE-1-SULFINOTHIOCIC-ACIDS-2-PROPENYL-ESTER	Bulb	--	--		
4	2-VINYL-4H-1,3-DITHIIN	Bulb	2	29		
6	ACETALDEHYDE	Bulb	--	--		Kim, S. M., Wu, C. M., Kobayashi, A., Kubota, K., Okumura, J. 1995. Volatile Compounds in Stir-Fried Garlic. J. Agric. Food Chem., 43(11): 2951-2955.
28	ADENOSINE	Bulb	5.7	370		
28	ADENOSINE	Tuber	--	--		
46	AJOENE	Bulb	--	--		
46	AJOENE	Bud	--	--		
3	ALANINE	Bulb	6.15	3168	-1	
67	ALLICIN	Bulb	1500	27800		
21	ALLIIN	Bulb	5000	10000		
21	ALLIIN	Tissue Culture	--	--		
21	ALLIIN	Leaf	--	76.5		
21	ALLIIN	Fruit Juice	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
21	ALLIIN	Essential Oil	--	--		Bekdairova, K. Z., Klyshev, L. K. 1982. Garlic Essential Oil and its Quantitative Analysis. Izv Akad Nauk Kaz Ssr Ser Biol, 1: 6-11.
2	ALLISTATIN-I	Bulb	--	--		
2	ALLISTATIN-II	Bulb	--	--		
25	ALLITHIAMIN	Bulb	--	3		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
6	ALLIXIN	Bulb	--	--		
1	ALLYL-1-PROPENYL-THIOSULFINATE	Bulb	--	--		
5	ALLYL-ALCOHOL	Essential Oil	--	--		Wealth of India.
5	ALLYL-ALCOHOL	Bulb	--	--		
1	ALLYL-DISULFIDE	Bulb	--	--		
8	ALLYL-MERCAPTAN	Bulb	--	--		
8	ALLYL-MERCAPTAN	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ALLYL-METHYL-DISULFIDE	Bulb	--	--		
2	ALLYL-METHYL-DISULFIDE	Essential Oil	--	--		
2	ALLYL-METHYL-DISULFIDE	Fruit Juice	--	--		Deruaz, D., et. al. 1994. Analytical Strategy by Coupling Headspace Gas Chromatography, Atomic Emission Spectrometric Detection and Mass Spectrometry Application to Sulfur Compounds from Garlic. J. Chromatogr., 677(2): 345-354.
3	ALLYL-METHYL-TRISULFIDE	Bulb	--	--		
3	ALLYL-METHYL-TRISULFIDE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ALLYL-METHYL-TRISULFIDE	Fruit Juice	--	--		Deruaz, D., et. al. 1994. Analytical Strategy by Coupling Headspace Gas Chromatography, Atomic Emission Spectrometric Detection and Mass Spectrometry Application to Sulfur Compounds from Garlic. J. Chromatogr., 677(2): 345-354.
3	ALLYL-PROPYL-DISULFIDE	Bulb	36	216		
1	ALLYL-TRISULFIDE	Bulb	--	--		
2	ALLYLMETHYLSULFIDE	Essential Oil	--	--		
2	ALLYLMETHYLSULFIDE	Bulb	--	--		
2	ALLYLMETHYLSULFIDE	Fruit Juice	--	--		Deruaz, D., et. al. 1994. Analytical Strategy by Coupling Headspace Gas Chromatography, Atomic Emission Spectrometric Detection and Mass Spectrometry Application to Sulfur Compounds from Garlic. J. Chromatogr., 677(2): 345-354.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	ALPHA-LINOLENIC-ACID	Plant	60	720	-1.2394102447376205	Stitt, Paul. Why George should eat broccoli.
11	ALPHA-PHELLANDRENE	Bulb	--	--		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.
32	ALPHA-TOCOPHEROL	Bulb	0.1	12	-1	
5	ALUMINUM	Bulb	52	52	-1	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	ALUMINUM	Root	19	52	-0.28457925346062496	
101	APIGENIN	Bulb	--	693		
12	ARACHIDONIC-ACID	Bulb	--	--		
14	ARGININE	Bulb	81	15216	1	
112	ASCORBIC-ACID	Bulb	100	788		
112	ASCORBIC-ACID	Flower	440	3793	0.3329412309680728	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
112	ASCORBIC-ACID	Leaf	390	2868	-0.17780624278348023	
112	ASCORBIC-ACID	Shoot	420	1883	-0.2799583750115791	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
112	ASCORBIC-ACID	Root	--	--		
2	ASPARAGINE	Bulb	--	29000		
3	ASPARTIC-ACID	Bulb	0.1	11736	1	
3	ASPARTIC-ACID	Leaf	--	--		
53	BETA-CAROTENE	Bulb	--	0.17	-1	
53	BETA-CAROTENE	Flower	0.6	5	-0.5451960528647178	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Leaf	9	68	-0.841802785465085	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Shoot	2	9	-0.6835691781431281	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Root	0.1	0.2	-0.4351433725059564	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-PHELLANDRENE	Bulb	--	--		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.
47	BETA-SITOSTEROL	Plant	--	--		
47	BETA-SITOSTEROL	Bulb	13	555	1	
4	BIOTIN	Bulb	22	22		
4	BORON	Bulb	3	6	-1	
102	CAFFEIC-ACID	Bulb	10	20		
28	CALCIUM	Bulb	130	4947	1.1604999014541306	
28	CALCIUM	Flower	250	2155	-1.0002454452549991	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Leaf	580	4265	-0.9683517334872921	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Shoot	120	538	-1.0364734470880839	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Root	315	850	-0.7176503152245389	
4	CALCIUM-OXALATE	Bulb	--	--		
2	CAMPESTEROL	Bulb	--	150	1	
1	CELLULOSE	Bulb	6000	18000		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
77	CHLOROGENIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
21	CHLOROPHYLL	Bulb	--	--		
1	CHOLESTEROL	Bulb	--	80		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
20	CHOLINE	Bulb	--	--		
24	CHROMIUM	Bulb	0.1	15	-1	
24	CHROMIUM	Root	0.6	1.5	-0.26097057892644915	



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	CITRAL	Bulb	--	--		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.
5	CITRULLINE	Bulb	--	--		
2	COBALT	Bulb	0.5	100	1	
2	COBALT	Root	3.7	10	-0.3281581013365335	
2	CONIFERIN	Plant	--	--		
12	COPPER	Bulb	1.4	9.7	-1.2743861857286207	
3	CYCLOALLIIN	Bulb	500	4285		
13	CYSTEINE	Leaf	--	--		
13	CYSTEINE	Bulb	--	--		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
2	CYSTINE	Bulb	650	1560	-1	
2	CYSTINE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	DESGALACTOTIGONIN	Root	400	400		
26	DIALLYL-DISULFIDE	Bulb	16	634		
26	DIALLYL-DISULFIDE	Essential Oil	--	--		
26	DIALLYL-DISULFIDE	Bud	--	--		
26	DIALLYL-DISULFIDE	Fruit Juice	--	--		Deruaz, D., et. al. 1994. Analytical Strategy by Coupling Headspace Gas Chromatography, Atomic Emission Spectrometric Detection and Mass Spectrometry Application to Sulfur Compounds from Garlic. J. Chromatogr., 677(2): 345-354.
1	DIALLYL-HEPTASULFIDE	Bulb	--	--		
1	DIALLYL-HEXASULFIDE	Bulb	--	--		
2	DIALLYL-PENTASULFIDE	Bulb	--	--		
25	DIALLYL-SULFIDE	Bulb	2	99		
25	DIALLYL-SULFIDE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	DIALLYL-SULFIDE	Fruit Juice	--	--		Deruaz, D., et. al. 1994. Analytical Strategy by Coupling Headspace Gas Chromatography, Atomic Emission Spectrometric Detection and Mass Spectrometry Application to Sulfur Compounds from Garlic. J. Chromatogr., 677(2): 345-354.
5	DIALLYL-TETRASULFIDE	Bulb	--	119		
28	DIALLYL-TRISULFIDE	Bulb	--	870		
28	DIALLYL-TRISULFIDE	Essential Oil	--	--		
28	DIALLYL-TRISULFIDE	Bud	--	--		
2	DIMETHYL-DISULFIDE	Bulb	0.6	2.5		
2	DIMETHYL-DISULFIDE	Essential Oil	--	--		
2	DIMETHYL-SULFIDE	Bulb	--	--		
2	DIMETHYL-SULFIDE	Essential Oil	--	--		
1	DIMETHYL-THIOSULFINATE	Bulb	--	--		
21	EICOSAPENTAENOIC-ACID	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ENDOLYSIN	Bulb	--	0.096	1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
3	ENDOLYSIN	Leaf	--	1.7	1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
3	ERUBOSIDE-B	Bulb	0.5	13		
61	FERULIC-ACID	Bulb	7	27	1	
15	FIBER	Bulb	7000	39000	-1	
15	FIBER	Flower	8000	69000	-0.7654204298509104	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Leaf	18000	132000	-0.3652331579529285	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	FIBER	Shoot	17000	76000	-1.1365447435760112	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
8	FRUCTOSE	Bulb	--	14000	-1	
8	FRUCTOSE	Leaf	--	--		Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.
1	GALACTOSE	Bulb	--	--		Wealth of India.
35	GERANIOL	Bulb	--	--		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.
7	GLUCOSE	Bulb	--	12000	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	GLUCOSE	Leaf	--	--		Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.
8	GLUTAMIC-ACID	Bulb	5	19320		
8	GLUTAMIC-ACID	Leaf	--	--		
5	GLUTAMINE	Bulb	--	2300		
7	GLUTATHIONE	Bulb	--	--		
12	GLYCINE	Bulb	2000	4800	-1	
12	GLYCINE	Leaf	--	--		
1	GUANYLATE-CYCLASE-INHIBITOR	Bulb	--	--		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
1	HEXADECANOL	Bulb	--	20		
7	HISTIDINE	Bulb	2.4	2712	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	INULIN	Bulb	--	--		
12	IODINE	Bulb	0.03	0.7		
1	IONOL	Bulb	--	950		
6	IRON	Bulb	8	129	0.6282374306688813	
6	IRON	Flower	9	78	-0.5902911429622495	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Leaf	6	44	-0.8090496896645762	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Shoot	17	76	-0.5665556726665807	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Root	1	3	-0.43729483357925597	
3	ISOLEUCINE	Bulb	0.5	5208	1	
3	ISOLEUCINE	Leaf	--	--		
75	KAEMPFEROL	Plant	--	--		
2	LEUCINE	Bulb	0.3	7392	1	
2	LEUCINE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	LIGNIN	Bulb	--	16000		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
13	LIGNIN	Epidermis	--	16000		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
53	LINALOOL	Bulb	--	--		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.
27	LINOLEIC-ACID	Bulb	1200	7800		
4	LYSINE	Bulb	10	6552	1	
4	LYSINE	Leaf	--	--		



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
65	MAGNESIUM	Bulb	160	1210	0.6820084924988981	
65	MAGNESIUM	Root	448	1210	-0.7191638867513974	
14	MANGANESE	Bulb	1.6	15.3	-0.55952175946182	
14	MANGANESE	Root	0.5	1.4	-0.5291560655019355	
15	METHIONINE	Bulb	0.1	1824	1	
15	METHIONINE	Leaf	--	--		
1	METHYL-AJOENE	Bulb	--	--		
1	METHYL-ALLYL-TRISULFIDE	Bulb	--	416		
2	MOLYBDENUM	Bulb	0.05	0.8	-1.0000000000000002	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
3	MURAMIDASE	Bulb	--	0.096	1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
34	MYRICETIN	Bulb	--	693		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MYRISTIC-ACID	Bulb	--	614	1	
39	NIACIN	Bulb	4	17	-1	
39	NIACIN	Flower	4	34	-0.5956297814273982	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Leaf	6	44	-0.6507613828513281	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Shoot	5	22	-1.0720100032147943	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Root	3	7.4	-1.2415693146230473	
3	NICKEL	Bulb	0.1	1.7	-0.9999999999999996	
11	NICOTINIC-ACID	Bulb	4.8	4.8		
64	OLEANOLIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
18	OLEIC-ACID	Plant	--	--		
18	OLEIC-ACID	Bulb	60	1200	-1	
5	ORNITHINE	Leaf	--	--		
5	ORNITHINE	Bulb	--	2		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	P-COUMARIC-ACID	Bulb	2	58		
13	P-HYDROXY-BENZOIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
13	P-HYDROXY-BENZOIC-ACID	Bulb	--	13	-1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
13	PALMITIC-ACID	Bulb	400	3600	1	
11	PANTOTHENIC-ACID	Bulb	2.6	7.5	-1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
24	PECTIN	Bulb	--	3000		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	PECTIN	Fruit Essent. Oil	--	270000		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
1	PENTADECANOIC-ACID	Bulb	--	20		
7	PHENYLALANINE	Bulb	0.44	4392	1	
8	PHLOROGLUCINOL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
2	PHOSPHATIDYL-CHOLINE	Bulb	--	--		
4	PHOSPHORUS	Bulb	880	5220	1	
4	PHOSPHORUS	Flower	460	3966	0.10782054497788832	
4	PHOSPHORUS	Leaf	460	3382	-0.29243893688860645	
4	PHOSPHORUS	Shoot	520	2332	-0.4790926300874732	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Root	1650	4460	0.16556335586130524	
9	PHYTIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	PHYTIC-ACID	Bulb	--	--		
2	PHYTOSTEROLS	Bulb	18	80	-1	
14	POTASSIUM	Bulb	3600	13669	-1	
14	POTASSIUM	Leaf	3260	23971	-0.28142082891204606	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
14	POTASSIUM	Shoot	2730	12242	-0.815300576130191	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
14	POTASSIUM	Root	4366	11800	-0.2913401510777741	
2	PROSTAGLANDIN-A-1	Bulb	--	--		
2	PROSTAGLANDIN-E-1	Bulb	--	--		
3	PROSTAGLANDIN-E-2	Bulb	--	--		
176	QUERCETIN	Bulb	0.08	200	-1	
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
1	RAFFINOSE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	RAFFINOSE	Leaf	--	--		Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.
15	RIBOFLAVIN	Bulb	0.5	3	-1	
15	RIBOFLAVIN	Flower	0.6	5.2	-0.23690854372659376	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Leaf	1.4	10.3	-0.1295804213689329	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Shoot	0.6	2.7	-1.5303223644744455	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Root	0.6	1.6	-0.5415349954750799	
87	RUTIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
5	S-ALLYL-CYSTEINE-SULFOXIDE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	S-ALLYL-L-CYSTEINE	Bulb	--	10		
11	S-ALLYLMERCAPTOCYSTEINE	Bulb	2	5		
2	S-METHYL-CYSTEINE-SULFOXIDE	Bulb	500	5715		
2	S-METHYL-L-CYSTEINE-SULFOXIDE	Bulb	--	--		
7	SALICYLATES	Bulb	1	4	-1	
34	SALICYLIC-ACID	Bulb	--	1		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
5	SAPONINS	Bulb	350	1200		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
60	SELENIUM	Bulb	0.1	1.6	1.0000000000000002	
60	SELENIUM	Root	0.6	1.6	-0.24863436856020282	
1	SERINE	Bulb	5	4560	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	SILICON	Bulb	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	SILICON	Root	--	--		
9	SINAPIC-ACID	Plant	27	27	1	
9	SINAPIC-ACID	Bulb	--	2		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
1	SODIUM	Bulb	158	559	-0.5949158142450202	
1	SODIUM	Leaf	40	294	-0.5950684790155282	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SODIUM	Root	104	280	-0.3824002869842817	
1	STACHYOSE	Bulb	--	--		
5	STARCH	Root	29600	80000	-0.9861330113268916	
12	STIGMASTEROL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	SUCCINIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
14	SUCROSE	Bulb	--	70000	-1	
14	SUCROSE	Leaf	--	--		Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.
14	SULFUR	Bulb	2300	10570	1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
6	TAURINE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
6	TAURINE	Bulb	--	0.2		
31	THIAMIN	Bulb	2	8	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
31	THIAMIN	Flower	1.1	9.5	1.226854112674882	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Leaf	1.1	8.1	-0.04265172097809442	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Shoot	1.4	6.3	-0.6401693937758542	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	THREONINE	Bulb	2	3768	1	
4	THREONINE	Leaf	--	--		
4	TIN	Bulb	6	6		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	TIN	Root	2.2	6	-1.0659197099535618	
1	TRANS-AJOENE	Bulb	268	268		
1	TRANS-CIS-AJOENE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	TRIGONELLINE	Bulb	100	890		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
29	TRYPTOPHAN	Bulb	0.7	1584	-1	
29	TRYPTOPHAN	Leaf	--	--		
1	TYROSINASE	Bulb	--	--		
8	TYROSINE	Bulb	0.6	1944	1	
8	TYROSINE	Leaf	--	--		
1	URANIUM	Bulb	--	--		
3	VALINE	Bulb	0.8	6984	1	
3	VALINE	Leaf	--	--		
24	VANILLIC-ACID	Bulb	--	6	-1	LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	XYLOGLUCAN	Bulb	1000	3000		LAWSON in Koch, H. P. and Lawson, L. D., eds. 1996. Garlic- The Science and therapeutic application of Allium sativum L. and related species. Williams & Wilkins, Baltimore. 329 pp.
3	XYLOSE	Root	--	--		Wealth of India.
77	ZINC	Bulb	15.3	15.3	-0.616532999263753	
77	ZINC	Root	--	--		