

**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	--	--		
0	(E)-1,2-PROPENE-1-SULFINOTHIOCIC-ACID-S-METHYL-ESTER	Bulb	--	--		
0	(E)-2-PROPENYL-1-PROPENYL-DISULFIDE	Bulb	--	--		
0	(Z)-2-PROPENYL-1-PROPENYL-DISULFIDE	Bulb	--	--		
0	1,2,3-TRI-THI-4-ENE	Essential Oil	--	--		
0	1,2,3-TRI-THI-4-ENE	Bulb	--	--		
0	1,2-(PROP-2-ENYL)-DISULFANE	Bulb	--	--		
0	1,2-DIMERCAPTOCYCLOPENTANE	Bulb	2.4	2.4		
0	1,2-EPITHIOPROPANE	Bulb	0.1	1.66		
0	1,3-DITHIANE	Bulb	0.08	3		
0	1-HEXANOL	Bulb	0.23	0.23		
0	1-METHYL-1,2-(PROP-2-ENYL)-DISULFANE	Bulb	--	--		
0	1-METHYL-2-(PROP-2-ENYL)-DISULFANE	Bulb	--	--		
0	1-METHYL-3-(PROP-2-ENYL)-TRISULFANE	Bulb	--	--		
0	1-PROPENYL-ALLYL-THIOSULFINATE	Bulb	--	--		
0	2,3,4-TRITHIAPENTANE	Bulb	--	--		
0	2,5-DIMETHYL-PYRAZINE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2,5-DIMETHYL-TETRAHYDROTHIOPHENE	Bulb	0.6	0.6		
0	2,5-DIMETHYLTHIOPHENE	Bulb	--	138		
0	2,6-DIMETHYL-PYRAZINE	Bulb	--	--		
0	2-METHYL-BENZALDEHYDE	Bulb	0.1	60		
0	2-PROPEN-1-OL	Bulb	0.1	121		
1	2-PROPENE-1-SULFINOTHIOCIC-ACIDS-2-PROPENYL-ESTER	Bulb	--	--		
0	2-PROPENYL-1-PROPENYL-DISULFIDE	Essential Oil	--	--		
0	2-PROPENYL-L-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	2-PROPENYL-TETRASULFIDE	Essential Oil	--	--		
0	2-VINYL-1,3-DITHIIN	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
0	2-VINYL-1,3-DITHIINE	Bulb	--	--		
4	2-VINYL-4H-1,3-DITHIIN	Bulb	2	29		
0	2-VINYL-4H-2,3-DITHIIN	Bulb	--	--		
0	2-VINYL-DI-1,3-THIENE	Bulb	--	--		
0	24-METHYLENE-CYCLOARTENOL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
0	3,5-DIETHYL-1,2,4-TRITHIOLANE	Bulb	0.15	43		
0	3-ETHYL-2,5-DIMETHYL-PYRAZINE	Bulb	--	--		
0	3-METHYL-2-CYCLOPENTENE-1-THIONE	Bulb	0.16	1.6		
0	3-VINYL-1,2-DITHIACYCLOHEX-4-ENE	Bulb	--	--		
0	3-VINYL-1,2-DITHIACYCLOHEX-5-ENE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	3-VINYL-1,2-DITHIIN	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.
0	3-VINYL-1,2-DITHIINE	Bulb	--	--		
0	3-VINYL-4H-1,2-DITHIIN	Bulb	0.34	178		
0	4-METHYL-5-VINYLTIAZOLE	Bulb	0.75	0.75		
0	5-BUTYL-CYSTEINE-SULFOXIDE	Bulb	--	--		
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.
0	ACYL-ANTHOCYANIN	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	--	--		
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.
0	ALLIINASE	Bulb	3500	28500		
0	ALLIN	Bulb	--	13000		
0	ALLISATIN	Plant	--	--		
2	ALLISTATIN-I	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	ALLIUM-FRUCTAN	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-1	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-2	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-3	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-4	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-5	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-6	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-7	Bulb	--	--		
0	ALLIUM-FRUCTAN-K-8	Bulb	--	--		
0	ALLIUM-LECTIN-AS-1	Bulb	--	--		
0	ALLIUM-LECTIN-AS-2	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALLIUM-SATIVUM-D-GALACTAN	Bulb	--	--		
0	ALLIUM-SATIVUM-LECTIN-ASA-I	Bulb	--	--		
0	ALLIUM-SATIVUM-LECTIN-ASA-III	Bulb	--	--		
0	ALLIUM-SATIVUM-PROTEASE-INHIBITOR-AS-1	Bulb	--	--		
6	ALLIXIN	Bulb	--	--		
1	ALLYL-1-PROPENYL-THIOSULFINATE	Bulb	--	--		
0	ALLYL-1-PROPENYLTETRASULFIDE	Bulb	--	99		
0	ALLYL-1-PROPENYLTRISULFIDE	Bulb	--	119		
0	ALLYL-2-PROPENETHIOSULFINATE	Bulb	2000	11430		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	ALLYL-ALCOHOL	Essential Oil	--	--		Wealth of India.
5	ALLYL-ALCOHOL	Bulb	--	--		
0	ALLYL-ALLIIN	Bulb	--	--		
0	ALLYL-COMPOUNDS	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	ALLYL-DISULFIDE	Bulb	--	--		
8	ALLYL-MERCAPTAN	Bulb	--	--		
8	ALLYL-MERCAPTAN	Plant	--	--		
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.
0	ALLYL-METHYL-THIOSULFINATE	Bulb	--	--		



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALLYL-METHYL-THIOSULFINATES	Bulb	300	4285		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	ALLYL-METHYL-TRISULFIDE	Bulb	--	--		
3	ALLYL-METHYL-TRISULFIDE	Essential Oil	--	--		
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALLYL-PROPENYL-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-PROPYL-DISULFIDE	Bulb	36	216		
0	ALLYL-TRANS-1-PROPENYL-DISULFIDE	Bulb	--	--		
0	ALLYL-TRANS-1-PROPENYL-THIOSULFINATE	Bulb	--	--		
0	ALLYL-TRANS-1-PROPENYL-THIOSULFINATES	Bulb	50	2855		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	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.
0	ALPHA-AMINO-BUTYRIC-ACID	Bulb	--	--		
15	ALPHA-LINOLENIC-ACID	Plant	60	720	-1.2394102447376205	Stitt, Paul. Why George should eat broccoli.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	ALPHA-PROSTAGLANDIN-F-1	Bulb	--	--		
0	ALPHA-PROSTAGLANDIN-F-2	Bulb	--	--		
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	
0	ANILINE	Bulb	10	10		
101	APIGENIN	Bulb	--	693		
0	ARABINOSE	Bulb	--	--		Wealth of India.
12	ARACHIDONIC-ACID	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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
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	--	--		
0	ASH	Bulb	10000	395000	1	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Flower	6000	52000	-0.3771772570194079	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ASH	Leaf	10000	74000	-0.7902317558058641	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Shoot	7000	31000	-1.6573953704783664	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Root	12950	35000	-0.9297321702301228	
2	ASPARAGINE	Bulb	--	29000		
3	ASPARTIC-ACID	Bulb	0.1	11736	1	
3	ASPARTIC-ACID	Leaf	--	--		
0	AUXIN	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.
53	BETA-CAROTENE	Bulb	--	0.17	-1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	
0	BETA-CHLOROGENIN	Bulb	--	--		Lachance, PA. Ed. 1997. Nutraceuticals: Designer Foods III. Garlic, Soy and Licorice. Food and Nutrition Press, Inc. Turnbull, Conn. 06611. 375pp.

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	
0	BETA-TOCOPHEROL	Bulb	--	--		Stitt, Paul. Why George should eat broccoli.
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



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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
28	CALCIUM	Root	315	850	-0.7176503152245389	
0	CALCIUM-FRUCTURONATE	Plant	--	--		
4	CALCIUM-OXALATE	Bulb	--	--		
2	CAMPESTEROL	Bulb	--	150	1	
0	CARBOHYDRATES	Bulb	274000	851000	1	
0	CARBOHYDRATES	Flower	94000	810000	0.807807151549158	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Leaf	95000	699000	0.693073056260634	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CARBOHYDRATES	Shoot	201000	901000	1.7601339567922876	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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.
0	CHITINASE	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	
0	CIS-2-PROPENYL-1-PROPENYL-DISULFIDE	Essential Oil	--	--		
0	CIS-AJOENE	Bulb	--	59.2		

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	
0	CYANIDIN-3-GLUCOSIDE	Bulb	--	--		Wealth of India.
0	CYCLIC-SULFUR-S8	Bulb	--	2455		
3	CYCLOALLIIN	Bulb	500	4285		
13	CYSTEINE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	--	--		
0	DEOXYALLIIN	Bulb	--	--		
1	DESGALACTOTIGONIN	Root	400	400		
0	DESOXYRIBONUCLEASE	Bulb	--	--		
0	DI-1-PROPENYL-TRISULFIDE	Bulb	--	139		
0	DI-PROP-2-ENYL-SULFANE	Bulb	--	--		
0	DI-PROP-2-ENYL-TRISULFIDE	Essential Oil	--	--		
26	DIALLYL-DISULFIDE	Bulb	16	634		
26	DIALLYL-DISULFIDE	Essential Oil	--	--		
26	DIALLYL-DISULFIDE	Bud	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	--	--		
0	DIALLYL-MONOSULFIDE	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	--	--		
0	DIGALACTOSYL-DIGLYCERIDE	Bulb	--	--		
0	DIMETHYL-AJOENE	Bulb	--	--		
0	DIMETHYL-DIFURAN	Bulb	5	30		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIMETHYL-DISELENIDE	Bulb	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	DIMETHYL-DISULFIDE	Bulb	0.6	2.5		
2	DIMETHYL-DISULFIDE	Essential Oil	--	--		
0	DIMETHYL-HEXASULFIDE	Bulb	--	--		
0	DIMETHYL-PENTASULFIDE	Bulb	--	--		
0	DIMETHYL-SELENIDE	Bulb	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	DIMETHYL-SULFIDE	Bulb	--	--		
2	DIMETHYL-SULFIDE	Essential Oil	--	--		
1	DIMETHYL-THIOSULFINATE	Bulb	--	--		
0	DIMETHYL-TRISULFIDE	Bulb	0.8	19		



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIMETHYL-TRISULFIDE	Essential Oil	--	--		
0	DIMETHYL-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.
0	DIMETHYLTETRASULFIDE	Bulb	--	--		
0	DIPROP-2-ENYL-DISULFIDE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIPROPENYL-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.
0	DIPROPYLSULFIDE	Bulb	--	178		
0	DIPROPYLTETRASULFIDE	Bulb	--	20		
0	DISULFIDES	Bulb	--	--		
0	DIVINYL-ETHER-SYNTHASE	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.
0	EO	Bulb	600	3600	1.158132207353964	
0	EO	Root	370	4000	-0.46638185891244993	
3	ERUBOSIDE-B	Bulb	0.5	13		
0	ETHANOLAMINE	Bulb	--	0.4		
0	ETHYL-2-PROPENESULFINATE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	F-CHLOROGENIN	Bulb	47	135		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.
0	F-GITONIN	Root	--	300		
0	F-STIVOGENIN	Bulb	12	34		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
0	F-TIGOGENIN	Bulb	5	15		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.
0	FAT	Bulb	2000	12000	-1	
0	FAT	Flower	2000	17000	-0.6420122091855959	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Leaf	5000	37000	-0.3878173439561933	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Shoot	3000	13000	-0.6338235673241969	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	FAT	Root	3330	9000	-0.4628723877991655	
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
15	FIBER	Shoot	17000	76000	-1.1365447435760112	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FIBER(CRUDE)	Root	--	20000	-2.6996939373508893	
0	FIBER(DIETARY)	Root	--	340000	-0.6381012427914107	
0	FOLIACIN	Bulb	1	1		USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	FRUCTANS	Bulb	230000	715000		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.
0	FRUCTOSANS	Bulb	--	--		
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-GLUTAMYL-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.
0	GAMMA-GLUTAMYL-METHIONINE	Bulb	20	345		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.
0	GAMMA-GLUTAMYL-PHENYLALANINE	Bulb	--	--		



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-GLUTAMYL-S-ALLYL-MERCAPTOCYSTEINE	Bulb	10	85		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.
0	GAMMA-GLUTAMYL-S-ALLYLCYSTEINE	Bulb	2000	17145		
0	GAMMA-GLUTAMYL-S-BETA-CARBOXY-BETA-METHYL-ETHYL-CYSTEINYL-GLYCINE	Bulb	--	--		
0	GAMMA-GLUTAMYL-S-CIS-1-PROPENYLCYSTEINE	Bulb	60	430		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.
0	GAMMA-GLUTAMYL-S-METHYL-CYSTEINE	Bulb	100	1145		
0	GAMMA-GLUTAMYL-S-METHYLCYSTEINE-SULFOXIDE	Bulb	--	--		
0	GAMMA-GLUTAMYL-S-PROPYL-CYSTEINE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-GLUTAMYL-S-TRANS-1-PROPENYLCYSTEINE	Bulb	3000	25715		
0	GAMMA-GLUTAMYL-S-TRANS-1-PROPENYLCYSTEINE-SULFOXIDE	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.
0	GAMMA-L-GLUTAMYL-5-ALLYL-CYSTEINE	Bulb	--	736		
0	GAMMA-L-GLUTAMYL-CYSTEINES	Bulb	5000	45715		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.
0	GAMMA-L-GLUTAMYL-ISOLEUCINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-L-LEUCINE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-L-GLUTAMYL-L-PHENYLALANINE	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.
0	GAMMA-L-GLUTAMYL-L-VALINE	Plant	--	--		
0	GAMMA-L-GLUTAMYL-METHIONINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-PHENYLALANINE	Bulb	--	63.2		
0	GAMMA-L-GLUTAMYL-S-(2-CARBOXY-1-PROPYL)-CYSTEINEGLYCINE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GAMMA-L-GLUTAMYL-S-(TRANS-1-PROPENYL)-CYSTEINE	Bulb	--	224		
0	GAMMA-L-GLUTAMYL-S-ALLYL-CYSTEINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-S-ALLYL-L-CYSTEINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-S-ALLYL-MERCAPTO-CYSTEINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-S-BETA-CARBOXY-BETA-METHYL-ETHYL-CYSTEINYL-GLYCINE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-S-METHYL-L-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	GAMMA-L-GLUTAMYL-S-PROPYL-L-CYSTEINE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	GERMANIUM	Bulb	--	0.3		
0	GIBBERELLIN-A-3	Bulb	--	--		
0	GIBBERELLIN-A-7	Bulb	--	--		
0	GITONIN	Root	300	300		
0	GITONIN-F	Root	--	300		
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	--	--		
0	GLYCEROL-SULFOQUINOVOSIDE	Bulb	--	--		
12	GLYCINE	Bulb	2000	4800	-1	
12	GLYCINE	Leaf	--	--		
0	GUANOSINE	Bulb	200	400		
0	GUANOSINE	Tuber	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	HEPTADECANONE	Bulb	--	20		
0	HEXA-1,5-DIENYL-TRISULFIDE	Bulb	--	--		
1	HEXADECANOL	Bulb	--	20		
0	HEXOKINASE	Bulb	--	--		
7	HISTIDINE	Bulb	2.4	2712	1	
19	INULIN	Bulb	--	--		
12	IODINE	Bulb	0.03	0.7		
1	IONOL	Bulb	--	950		
6	IRON	Bulb	8	129	0.6282374306688813	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	
0	ISOALLIIN	Bulb	200	3430		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
0	ISOBUTYL-ISOTHIOCYANATE	Bulb	0.14	25		
0	ISOERUBOSIDE-B	Bulb	--	5		
3	ISOLEUCINE	Bulb	0.5	5208	1	
3	ISOLEUCINE	Leaf	--	--		
0	JASMONIC-ACID	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.
75	KAEMPFEROL	Plant	--	--		
0	KILOCALORIES	Bulb	1170	3630	-1	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	KILOCALORIES	Flower	390	3366	0.6776340607836474	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KILOCALORIES	Leaf	440	3240	0.35771209837431645	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	KILOCALORIES	Shoot	760	3410	0.7789080868628033	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	LEUCINE	Bulb	0.3	7392	1	
2	LEUCINE	Leaf	--	--		
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	LINALOL	Bulb	--	--		
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		
0	LINOLEIC-ACID-METHYL-ESTER	Bulb	--	--		
0	LINOLENIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINOLENIC-ACID	Bulb	--	--		
4	LYSINE	Bulb	10	6552	1	
4	LYSINE	Leaf	--	--		
65	MAGNESIUM	Bulb	160	1210	0.6820084924988981	
65	MAGNESIUM	Root	448	1210	-0.7191638867513974	
0	MALTOTRIOSE	Bulb	--	--		
14	MANGANESE	Bulb	1.6	15.3	-0.55952175946182	
14	MANGANESE	Root	0.5	1.4	-0.5291560655019355	
0	METHANE-SULFINOTHIOCIC-ACID-2-PROPENYL-ESTER	Bulb	--	--		
0	METHIIN	Bulb	500	5715		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.
15	METHIONINE	Bulb	0.1	1824	1	
15	METHIONINE	Leaf	--	--		
0	METHYL-1-PROPENYL-DISULFIDE	Bulb	--	40		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-1-PROPENYL-THIOSULFINATE	Bulb	--	--		
0	METHYL-1-PROPENYL-TRISULFIDE	Bulb	--	60		
1	METHYL-AJOENE	Bulb	--	--		
0	METHYL-ALLIIN	Bulb	--	--		
0	METHYL-ALLYL-DISULFIDE	Bulb	6	104		
0	METHYL-ALLYL-HEXASULFIDE	Bulb	--	--		
0	METHYL-ALLYL-PENTASULFIDE	Bulb	--	--		
0	METHYL-ALLYL-SULFIDE	Bulb	0.5	40		
0	METHYL-ALLYL-TETRASULFIDE	Bulb	--	40		
0	METHYL-ALLYL-THIOSULFINATE	Bulb	--	--		
1	METHYL-ALLYL-TRISULFIDE	Bulb	--	416		
0	METHYL-CYSTEINE-SULFOXIDE	Tissue Culture	--	--		
0	METHYL-DISULFIDE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	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.
0	METHYL-METHAN-THIOSULFINATE	Bulb	50	285		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.
0	METHYL-PROP-2-ENYL-TRISULFIDE	Essential Oil	--	--		
0	METHYL-PROPENYL-TETRASULFIDE	Bulb	--	119		
0	METHYL-PROPYL-DISULFIDE	Bulb	0.03	0.66		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-TRANS-1-PROPENYL-DISULFIDE	Bulb	--	--		
0	METHYL-TRANS-1-PROPENYL-THIOSULFINATE	Bulb	20	570		
0	METHYL-TRANS-PROPENYL-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.
0	METHYL-TRISULFIDE	Bulb	--	--		
0	METHYLPROPYL-TRISULFIDE	Bulb	--	20		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	MONOGALACTOSYL-DIGLYCERIDE	Bulb	--	--		
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MURIDAMASE	Leaf	--	1.7		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		
6	MYRISTIC-ACID	Bulb	--	614	1	
0	MYROSINASE	Bulb	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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		
0	OCTADECANOL	Bulb	--	20		
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		
0	OXOAMIDINE	Bulb	--	--		
25	P-COUMARIC-ACID	Bulb	2	58		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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		
0	PENTADECANOL	Bulb	--	20		
0	PENTADECANONE	Bulb	--	60		
0	PEROXIDASE	Bulb	--	--		
0	PHENOLICS	Bulb	--	40		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.
7	PHENYLALANINE	Bulb	0.44	4392	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	PHLOROGLUCINOL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
0	PHOSPHATIDIC-ACID	Bulb	--	--		
2	PHOSPHATIDYL-CHOLINE	Bulb	--	--		
0	PHOSPHATIDYL-ETHANOLAMINE	Bulb	--	--		
0	PHOSPHATIDYL-INOSITOL	Bulb	--	--		
0	PHOSPHATIDYL-SERINE	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.
9	PHYTIC-ACID	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PHYTIN	Bulb	790	2370		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	PHYTOSTEROLS	Bulb	18	80	-1	
0	POLYSACCHARIDES	Bulb	--	--		
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	
0	PROLINE	Bulb	1.3	2400	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROLINE	Leaf	--	--		
0	PROP-2-ENYL-DISULFANE	Bulb	--	--		
0	PROP-CIS-1-ENYL-ALLYL-DISULFIDE	Bulb	--	--		
0	PROP-TRANS-1-ENYL-ALLYL-TRISULFIDE	Bulb	--	--		
0	PROPENE	Bulb	0.01	6		
0	PROPENETHIOL	Bulb	1	41		
0	PROPENYL-METHYL-THIOSULFINATE	Bulb	--	--		
0	PROPENYLALLIIN	Bulb	--	--		
0	PROPYL-ALLYL-DISULFIDE	Bulb	--	99		
0	PROPYL-ALLYL-TRISULFIDE	Bulb	--	119		
0	PROSTAGLANDIN-A	Bulb	--	--		Pobozsny, K., Tetenyi, P., Hethelyi, I., Kocsar, L., Mann, V. 1979. Biologically Active Substances: Investigations into the Prostaglandin Content of Allium Species. I. Herba Hung, 18(2): 71-81.
2	PROSTAGLANDIN-A-1	Bulb	--	--		
0	PROSTAGLANDIN-A-2	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROSTAGLANDIN-B	Bulb	--	--		Pobozsny, K., Tetenyi, P., Hethelyi, I., Kocsar, L., Mann, V. 1979. Biologically Active Substances: Investigations into the Prostaglandin Content of Allium Species. I. Herba Hung, 18(2): 71-81.
0	PROSTAGLANDIN-B-1	Bulb	--	--		
0	PROSTAGLANDIN-B-2	Bulb	--	--		
2	PROSTAGLANDIN-E-1	Bulb	--	--		
3	PROSTAGLANDIN-E-2	Bulb	--	--		
0	PROSTAGLANDIN-F	Bulb	--	--		Pobozsny, K., Tetenyi, P., Hethelyi, I., Kocsar, L., Mann, V. 1979. Biologically Active Substances: Investigations into the Prostaglandin Content of Allium Species. I. Herba Hung, 18(2): 71-81.
0	PROSTAGLANDIN-F-1-ALPHA	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROSTAGLANDIN-F-2-ALPHA	Bulb	--	--		
0	PROTEIN	Bulb	35000	179000	1	
0	PROTEIN	Flower	14000	121000	-0.2530541000634186	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Leaf	26000	191000	-0.2079495086143212	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Shoot	12000	54000	-1.4095456506693607	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Root	66230	179000	0.6803603762263631	
0	PROTODEGALACTOTIGONIN	Bulb	--	10		
0	PROTODEGALACTOTIGONIN	Root	--	200		
0	PROTODESGALACTOTIGONIN	Bulb	10	10		
0	PROTOERUBOSIDE-B	Bulb	100	285		
0	PROTOISOERUBOSIDE-B	Bulb	4.2	--		
0	PSEUDOSCORIDININE-A	Bulb	--	--		



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PSEUDOSCORIDININE-B	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	--	--		
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.
0	RHAMNOSE	Bulb	--	--		Wealth of India.
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

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	S-(2-CARBOXY-PROPYL)-GLUTATHIONE	Bulb	90	255	1	
0	S-1-PROPENYL-CYSTEINE	Bulb	--	20		
0	S-ALLO-MERCAPTO-CYSTEINE	Bulb	--	2		
0	S-ALLO-MERCAPTO-L-CYSTEINE	Bulb	--	2		
0	S-ALLYL-CYSTEINE	Bulb	10	75		
5	S-ALLYL-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	S-ALLYL-CYSTEINE-SULPHOXIDE	Tissue Culture	--	--		
0	S-ALLYL-CYSTEINE-SULPHOXIDE	Leaf	--	--		
0	S-ALLYL-CYSTEINE-SULPHOXIDE	Shoot	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	S-ALLYL-CYSTEINE-SULPHOXIDE	Bulb	--	--		
24	S-ALLYL-L-CYSTEINE	Bulb	--	10		
11	S-ALLYLMERCAPTOCYSTEINE	Bulb	2	5		
0	S-ETHYL-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	S-METHYL-CYSTEINE	Bulb	--	--		
2	S-METHYL-CYSTEINE-SULFOXIDE	Bulb	500	5715		
0	S-METHYL-CYSTEINE-SULPHOXIDE	Tissue Culture	--	--		
0	S-METHYL-CYSTEINE-SULPHOXIDE	Shoot	--	--		
0	S-METHYL-CYSTEINE-SULPHOXIDE	Leaf	--	--		
0	S-METHYL-CYSTEINE-SULPHOXIDE	Bulb	--	--		
2	S-METHYL-L-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	S-METHYL-METHIONINE	Bulb	--	--		
0	S-METHYL-METHIONINE	Leaf	--	65	-1	
0	S-N-BUTYL-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	S-N-METHYL-CYSTEINE	Bulb	--	--		
0	S-PROPENYL-CYSTEINE	Bulb	--	--		
0	S-PROPYL-CYSTEINE-SULFOXIDE	Bulb	--	--		
0	S-PROPYL-CYSTEINE-SULPHOXIDE	Tissue Culture	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	S-PROPYL-CYSTEINE-SULPHOXIDE	Bulb	--	--		
0	S-PROPYL-CYSTEINE-SULPHOXIDE	Shoot	--	--		
0	S-PROPYL-CYSTEINE-SULPHOXIDE	Leaf	--	--		
0	S-TRANS-L-PROPENYL-CYSTEINE-SULFOXIDE	Bulb	500	5715		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.
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SAPOGENINS	Bulb	140	400		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.
0	SAPONIN	Bulb	--	--		
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.
0	SATIVOSIDE-B-1	Bulb	30	85		
0	SATIVOSIDE-C	Bulb	--	4		
0	SATIVOSIDE-R-1	Root	500	500		
0	SATIVOSIDE-R-2	Root	300	300		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SCORDINE	Bulb	250	250		
0	SCORDININ-A	Bulb	39000	39000		
0	SCORDININ-A-1	Bulb	--	--		
0	SCORDININE-A	Bulb	--	--		
0	SCORDININE-A-1	Bulb	66.7	30000		
0	SCORDININE-A-2	Bulb	250	8000		
0	SCORDININE-B	Bulb	--	800		
0	SCORDININE-B-1	Bulb	--	--		
0	SCORDININE-B-2	Bulb	--	--		
0	SCORDININE-B-3	Bulb	--	--		
0	SCORDININS	Bulb	30	85		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.
0	SCORDONIN-A	Bulb	--	39000		
0	SCORODININ-A-1	Bulb	67	30000		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SCORODININ-A-2	Bulb	250	8000		
0	SCORODININ-B	Bulb	800	800		
0	SCORODININE-A-3	Bulb	333	333		
0	SCORODOSE	Bulb	470000	530000		
60	SELENIUM	Bulb	0.1	1.6	1.0000000000000002	
60	SELENIUM	Root	0.6	1.6	-0.24863436856020282	
1	SERINE	Bulb	5	4560	1	
4	SILICON	Bulb	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	SILICON	Root	--	--		
9	SINAPIC-ACID	Plant	27	27	1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	SINAPINIC-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



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	SODIUM	Root	104	280	-0.3824002869842817	
1	STACHYOSE	Bulb	--	--		
5	STARCH	Root	29600	80000	-0.9861330113268916	
0	STEROLS	Bulb	18	50		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.
12	STIGMASTEROL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
7	SUCCINIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
14	SUCROSE	Bulb	--	70000	-1	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	SUGARS	Root	51800	140000	0.3495910254630421	
0	SULFIDES	Bulb	--	--		
0	SULFOLIPIDS	Bulb	--	29		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
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		
0	TELLURIUM	Bulb	0.01	0.8		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.
0	TETRAHYDRO-2,5-DIMETHYLTHIOPHENE	Bulb	--	40		
0	THIAMACORNINE	Bulb	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	THIAMAMIDINE	Bulb	--	--		
31	THIAMIN	Bulb	2	8	1	
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
0	THIAMINE	Root	2	5	0.14827404670978508	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	THIOSULFINATES	Bulb	3500	11800		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.
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	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TOCOPHEROLS	Bulb	2	5		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.
0	TRANS-1-PROPENYL-ALLYL-THIOSULFINATE	Bulb	--	--		
0	TRANS-1-PROPENYL-METHYL-DISULFIDE	Bulb	0.9	0.9		
0	TRANS-1-PROPENYL-METHYL-THIOSULFINATE	Bulb	--	--		
1	TRANS-AJOENE	Bulb	268	268		
1	TRANS-CIS-AJOENE	Bulb	--	--		
0	TRANS-S-(PROPENYL-1-YL)-CYSTEINE-DISULFIDE	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	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
0	VIT-U	Plant	--	--		
0	WATER	Bulb	585000	678000	-1.4116979121825834	
0	WATER	Flower	884000	884000	0.46844769491404276	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	WATER	Leaf	864000	864000	0.2811905966986211	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	WATER	Shoot	777000	777000	-2.1655989517785237	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	WATER	Root	--	630000	-0.911393968519532	
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	--	--		