

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Allium cepa*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	WATER	Leaf		922000.0	0.5705515493442906	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	WATER	Bulb	866000.0	918000.0	0.778867813617976	--
0	CARBOHYDRATES	Bulb	73200.0	798000.0	-1.0	--
0	CARBOHYDRATES	Leaf	47000.0	603000.0	-0.07037799270480313	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
27	LINOLEIC-ACID	Seed Oil	575000.0	590600.0	0.7844920848789769	--
0	POLYSACCHARIDES	Bulb	100000.0	400000.0		--
0	FRUCTOSAN	Bulb	100000.0	400000.0	1.0	--
18	OLEIC-ACID	Seed Oil	260000.0	292900.0	-0.1478289753657865	--
0	PROTEIN	Leaf	18000.0	231000.0	0.19108914041232994	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Bulb	10940.0	162000.0	-1.0	--
15	FIBER	Leaf	11000.0	141000.0	-0.2539378373860592	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Bulb	4400.0	126000.0	1.0	--
27	LINOLEIC-ACID	Seed	103500.0	106200.0	-0.00790147227328753	Wealth of India.
0	ASH	Leaf	7000.0	90000.0	-0.5083313983755301	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Leaf	6000.0	77000.0	0.4092541682128573	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
13	PALMITIC-ACID	Seed Oil		73000.0	-0.723771059427567	--
0	ASH	Bulb	4000.0	63000.0	-1.0	--
176	QUERCETIN	Bulb	0.0	48100.0	1.0	--
18	OLEIC-ACID	Seed		46800.0	-0.5943767329474172	Wealth of India.
0	FAT	Bulb	1000.0	36079.0	1.0	--
8	STEARIC-ACID	Seed Oil		35000.0	-0.6541098145281985	--
3	DIPHENYLAMINE	Bulb		23000.0		--
14	POTASSIUM	Bulb	1514.0	22164.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	NITROGEN	Bulb	1700.0	17690.0		ACTA AGRIC SCAND SUPPL 22: 1980
43	PROTocatechuic-acid	Bulb	4500.0	17540.0		--
14	ARGININE	Bulb	1580.0	17222.0	-1.0	USDA's Ag Handbook 8 and sequelae)
87	RUTIN	Bulb		14000.0		--
13	PALMITIC-ACID	Seed		13140.0	-0.4284802139449916	Wealth of India.
4	SPIRAEOSIDE	Bulb	10000.0	11300.0		--
3	ALANINE	Bulb	330.0	8597.0	1.0	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Bulb	640.0	6967.0	-1.0	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Seed		6300.0	-0.4287014331879593	Wealth of India.
4	LYSINE	Bulb	560.0	6104.0	-1.0	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Bulb	620.0	6005.0		USDA's Ag Handbook 8 and sequelae)
0	QUERCETIN-3,4'-DI-O-BETA-D-GLUCOSIDE	Bulb	1700.0	5600.0		--
4	PHOSPHORUS	Leaf	310.0	5513.0	0.09963731108701822	--
28	CALCIUM	Leaf	420.0	5385.0	-0.8918247706535197	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
12	GLYCINE	Bulb	490.0	5341.0	1.0	--
112	ASCORBIC-ACID	Leaf	390.0	5000.0	0.020016189970703997	--
0	ALLIOSPIROSIDE-A	Pericarp		4600.0		--
3	ISOLEUCINE	Bulb	420.0	4578.0	-1.0	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Bulb	410.0	4469.0	-1.0	USDA's Ag Handbook 8 and sequelae)
14	SULFUR	Bulb	80.0	4075.0	-1.0	--
4	PHOSPHORUS	Bulb	275.0	4038.0	-1.0	--
0	PROLINE	Bulb	370.0	4033.0	-1.0	USDA's Ag Handbook 8 and sequelae)
1	SERINE	Bulb	350.0	3815.0	-1.0	USDA's Ag Handbook 8 and sequelae)
0	KILOCALORIES	Bulb	380.0	3750.0	1.0	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KILOCALORIES	Leaf	260.0	3330.0	0.5027842271594564	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7	PHENYLALANINE	Bulb	300.0	3270.0	-1.0	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Bulb	290.0	3161.0	-1.0	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Bulb	280.0	3052.0	-1.0	USDA's Ag Handbook 8 and sequelae)
28	CALCIUM	Bulb	200.0	3008.0	0.11970003608893207	--
3	VALINE	Bulb	270.0	2943.0	-1.0	--
0	SFA	Bulb	260.0	2520.0		USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Bulb	240.0	2325.0	-1.0	--
2	CYSTINE	Bulb	210.0	2289.0	1.0	USDA's Ag Handbook 8 and sequelae)
18	OLEIC-ACID	Bulb	230.0	2230.0	1.0	--
13	MUFA	Bulb	230.0	2230.0		USDA's Ag Handbook 8 and sequelae)
7	HISTIDINE	Bulb	190.0	2071.0	-1.0	USDA's Ag Handbook 8 and sequelae)
1	SODIUM	Bulb	8.0	2052.0	1.4085638338778703	--
29	TRYPTOPHAN	Bulb	170.0	1853.0	1.0	USDA's Ag Handbook 8 and sequelae)
2	PHYTOSTEROLS	Bulb	150.0	1455.0	1.0	--
65	MAGNESIUM	Bulb	76.0	1230.0	0.7319115529256467	--
15	METHIONINE	Bulb	100.0	1090.0	-1.0	--
1	PYRUVIC-ACID	Fruit Juice		1034.0		Morgan, E. J. 1946. Pyruvic Acid in the Juice of Onion (<i>Allium cepa</i>). <i>Nature</i> (London), 157: 512.
1	PYRUVIC-ACID	Fruit		1034.0		--
20	CHOLINE	Bulb		830.0		Dakshinamurti, K. 1955. Choline Content of South Indian Foods. <i>Curr. Sci.</i> , 24: 194-195.
0	QUERCETIN-4-O-BETA-D-GLUCOSIDE	Bulb	100.0	800.0		--
47	BETA-SITOSTEROL	Bulb	120.0	510.0	-1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	DIPHENYLAMINE	Plant		500.0		Karawy, M. S., Ehayyal, A. S. E., Farrag, N. M., Ayad, M. M. 1986. Screening of Diphenylamine as an Antihyperglycaemic Agent in Certain Edible Plant Organs. Acta. Pharm. Hung, 56: 55-58.
0	ALLIOSPIROSIDE-B	Fruit		500.0		Kravets, S.D., Vollerner, Y.S., Gorovits, M.B., Shashkov, A.S., Abubakirov, N.K. 1987. Steroid of the Spirostand and Furostan Series from Plants of the Genus Allium. II. The Structure of Alliospiroside B from Allium cepa. Chem. Nat. Comp., 22(5): 553-556.
0	ALLIOSPIROSIDE-C	Fruit		491.0		Kravets, S. D., et. al. 1988. Steroids of the Spirostan and Furostan Series of Plants of the Allium Genus. XXIII. Structure of Cepagenin and of Alliospirosides C and D from Allium cepa. Chem. Nat. Comp., 23(6): 700-706.
6	IRON	Leaf	34.0	436.0	0.18456741976079077	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
5	ALUMINUM	Bulb	0.3	385.0	1.0	--
24	VANILLIC-ACID	Bulb		258.0	1.0	--
6	IRON	Seed		235.0	0.3912510395242066	--
0	ALLIOFUROSIDE-A	Pericarp		220.0		--
8	STEARIC-ACID	Bulb	20.0	195.0		--
0	STRONTIUM	Bulb	57.0	162.0		--
0	QUERCETIN-4',7-DI-O-BETA-D-GLUCOSIDE	Bulb	0.0	160.0		--
53	BETA-CAROTENE	Leaf	12.0	158.0	-0.4498575995747604	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	EO	Bulb	50.0	150.0	-1.2862606900150364	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	IRON	Bulb	2.0	135.0	0.7831452902858658	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	S-(2-CARBOXY-PROPYL)-GLUTATHIONE	Bulb		125.0	-1.0	Tsuboi, S., Kishimoto, S., Ohmori, S. 1989. S-(2-carboxypropyl)glutathione in Vegetables in Liliiflorae. J. Agric. Food Chem. 37(3): 611-615.
0	P-HYDROXYBANZOIC-ACID	Bulb		107.0		--
13	P-HYDROXY-BENZOIC-ACID	Bulb		107.0	1.0	--
0	PHLOROGLUCINOL-CARBOXYLIC-ACID	Bulb		100.0		Hermann, K. 1958. Flavonols and Phenols of the Onion (<i>Allium cepa</i>). Arch. Pharm. (Weinheim), 291: 238-247.
8	PHLOROGLUCINOL	Bulb		100.0		--
6	MYRISTIC-ACID	Bulb	10.0	100.0	-1.0	USDA's Ag Handbook 8 and sequelae)
39	NIACIN	Leaf	7.0	90.0	-0.09123627617407809	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Bulb	1.0	75.0	1.0	--
4	SILICON	Bulb	1.0	75.0		ACTA AGRIC SCAND SUPPL 22: 1980
0	ALLIOSPIROSIDE-D	Fruit		71.0		Kravets, S. D., et. al. 1988. Steroids of the Spirostan and Furostan Series of Plants of the Allium Genus. XXIII. Structure of Cepagenin and of Alliospirosides C and D from <i>Allium cepa</i> . Chem. Nat. Comp., 23(6): 700-706.
77	ZINC	Bulb	2.0	53.0	1.4104984605249231	--
53	BETA-CAROTENE	Bulb	0.0	52.0	0.9999999999999998	--
2	CAMPESTEROL	Bulb	10.0	50.0	-1.0	--
4	BORON	Bulb	1.0	45.0	1.0	--
12	STIGMASTEROL	Bulb		40.0		--
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Bulb	0.0	40.0		Abstract (See species file)
14	MANGANESE	Bulb	1.0	38.0	1.4045726642160135	--
77	ZINC	Seed		34.0	-0.31604114389068755	--
32	ALPHA-TOCOPHEROL	Bulb	0.4	30.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CAROTENE	Flower		28.0		Krylova, M. I. 1967. Carotenoids in the Reproductive Organs of Fertile and Sterile Onion Plants, <i>Allium cepa</i> . Bot. ZH., 52(9): 1340-1341.
53	BETA-CAROTENE	Flower		28.0	-0.18921282459251038	--
0	BARIUM	Bulb	4.0	28.0		--
0	S-PROP-1-ENYL-CYSTEINE-S-OXIDE	Bulb		26.0		--
7	SALICYLATES	Bulb	1.0	20.0	1.0	--
14	MANGANESE	Seed		19.4	-0.425040968734703	--
12	COPPER	Seed		18.2	0.3070837559561808	--
0	VIT-B-6	Bulb	1.0	18.0		USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Bulb	1.0	16.0	1.0	USDA's Ag Handbook 8 and sequelae)
0	BROMINE	Bulb	1.0	15.0		ACTA AGRIC SCAND SUPPL 22: 1980
15	RIBOFLAVIN	Bulb	0.4	15.0	1.0	--
15	TRIGONELLINE	Seed		13.0	-0.46591212987573255	Evans, L. S., Tramontano, W. A. 1984. Trigonelline and Promotion of Cell Arrest in G2 of Various Legumes. <i>Phytochemistry</i> , 23(9): 1837-1840.
12	COPPER	Bulb	0.3	11.0	0.10619884881071792	--
0	TITANIUM	Bulb	0.38	11.0		USDA's Ag Handbook 8 and sequelae)
9	OXALIC-ACID	Bulb		10.0		--
0	RUBIDIUM	Bulb	0.14	6.6		ACTA AGRIC SCAND SUPPL 22: 1980
31	THIAMIN	Leaf	0.5	6.4	-0.39693808734805064	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Bulb	0.3	6.0	-1.0	--
24	CHROMIUM	Seed		4.8	0.016797185555398934	--
3	NICKEL	Seed	0.03	4.0	-0.14389814511946067	--
24	CHROMIUM	Bulb	0.057	4.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	NICKEL	Bulb	0.05	2.5	0.9999999999999996	--
2	COBALT	Seed		2.5	-0.0975154003240051	--
2	MOLYBDENUM	Bulb	0.1	2.3	1.0000000000000002	--
75	KAEMPFEROL	Bulb		2.0		--
0	LEAD	Bulb	0.01	1.4		--
0	ZIRCONIUM	Bulb	0.76	1.0		--
2	PROSTAGLANDIN-A-1	Bulb		1.0		--
0	FLUORINE	Bulb	0.04	0.8		ACTA AGRIC SCAND SUPPL 22: 1980
61	FERULIC-ACID	Bulb		0.5	-1.0	--
0	MEVALONIC-ACID	Bulb		0.5		Wills, R. B. H., Scurr, E. V. 1975. Mevalonic Acid Concentrations in Fruit and Vegetable Tissues. Phytochemistry, 14: 1643.
3	CADMIUM	Bulb	0.005	0.38		--
11	LITHIUM	Bulb	0.152	0.324		--
3	ENDOLYSIN	Leaf		0.3	-1.0	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	Leaf		0.3		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.
2	COBALT	Bulb	0.001	0.2	-1.0000000000000002	--
2	ARSENIC	Bulb	0.002	0.076		--
3	SILVER	Bulb	0.038	0.054		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ENDOLYSIN	Bulb		0.033	-1.0	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		0.033	-1.0	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	LUTEIN	Bulb		0.02		Granado, F., Olmedilla, B., Blanco, I., Rojas-Hidalgo, E. 1992. Carotenoid Composition in Raw and Cooked Spanish Vegetables. J. Agr. Food Chem., 40(11): 2135-2140.
60	SELENIUM	Bulb	0.001	0.003	-1.0000000000000002	--
1	MERCURY	Bulb		0.001	-1.0	--
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	CEPAENE-4-A	Bulb				Bayer, T., Wagner, H., Wray, V., Dorsch, W. 1988. Inhibitors of Cyclo-Oxygenase and Lipoxygenase in Onions. Lancet, 8616: 906.
22	ISOQUERCITRIN	Bulb				Kiviranta, J., Huovinen, K., Hiltunen, R. 1986. Variation of Flavonoids in Allium cepa. Planta Medica, 6: 517-518.
0	SELENO-METHYL-SELENOCYSTEINE	Plant				Hamilton, J. W. 1975. Chemical Examination of Seleniferous Onions, Allium cepa. Adv. Front Plant Sci., 30: 189-.
0	CIS-3,5-DIETHYL-1,2,4-TRITHIOLANE	Leaf				Chemical Constituents of Oriental Herbs (3 diff. books)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2,4-DIMETHYLTHIOPHENE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. Nippon Eiyō Shokuryō Gakkaishi, 37(4): 343-347.
0	SELENO-METHIONINE	Plant				Hamilton, J. W. 1975. Chemical Examination of Seleniferous Onions, <i>Allium cepa</i> . Adv. Front Plant Sci., 30: 189-.
0	GLUCOFRUCTAN	Bulb				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	METHYL-N-PROPANE-THIOSULFINATE	Fruit Juice				Schmidt, N. E., et. al. 1996. Rapid Extraction Method of Quantitating the Lachrymatory Factor of Onion Using Gas Chromatography. J. Agric. Food Chem., 44(9): 2690-2693.
0	METHYLPROPYL-TRISULFIDE	Bulb				--
0	ALLIUM-CEPA-POLYSACCHARIDE	Bulb				Schnabl, H. 1977. Isolation and Identification of Soluble Polysaccharides in Epidermal Tissue of <i>Allium cepa</i> . Planta, 135: 307-.
0	DIHYDROALLIIN	Bulb				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	TULIPOSIDE-A	Root				Slob, A., Jekel, B., De Jong, B., Schlatmann, E. 1975. On the Occurrence of Tuliposides in the Liliiflorae. Phytochemistry, 14: 1997-2005.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
27	LINOLEIC-ACID	Bulb				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	METHYL-TRANS-PROPENYL-DISULFIDE	Bulb				Wealth of India.
10	XYLITOL	Bulb				Counsell, J. N., Robertson, D. J. 1976. Xylitol-A Sweetener Which is Kind to the Teeth. Food Process Ind., 45(54): 24-26.
0	SELENO-METHIONINE	Bulb				--
0	1(F)-BETA-FRUCTOSYL-SUCROSE	Bulb				Bacon, J. S. D. 1959. Trisaccharide Fraction of Some Monocotyledons. Biochem. J., 73: 507-514.
0	PROPANE-1-THIOL	Bulb				Wilkens, W. F. 1962. The Isolation and Identification of the Lachrymogenic Compound of Onion. Diss. Abstr. Int. B, 22: 3978.
0	31-NORLANOSTENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	ALLYLPROPYL-SULFIDE	Bulb				Wealth of India.
4	DIPROPYL-DISULFIDE	Bulb				--
0	GAMMA-GLUTAMYL-PHENYLALANINE-ETHYL-ESTER	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.
2	ASPARAGINE	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	DIMETHYL-DISULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
0	CYANIDIN-DIGLYCOSIDE	Bulb				Fuleki, T. 1969. The Anthocyanins of Strawberry, Rhubarb, Radish, and Onion. J. Food Sci., 34(4): 365-369.
0	THIOPROPANAL-S-OXIDE	Bulb				--
7	SUCCINIC-ACID	Leaf				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.
0	CEPAENE-3	Bulb				Bayer, T., Wagner, H., Wray, V., Dorsch, W. 1988. Inhibitors of Cyclo-Oxygenase and Lipoxygenase in Onions. Lancet, 8616: 906.
0	1-(PROPYL-DITHIO)-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
2	QUERCETIN-3,4'-DIGLYCOSIDE	Bulb				--
0	ALPHA-SITOSTEROL	Bulb				Smocziewiczowa, A., Nitschke, D. 1978. Study of Saponins and Sapogenins in Onions. Zesz Nauk Akad Ekon Poznaniu Ser, 1(73): 40-43.
0	CIS-2,3-DIMETHYL-5,6-DITHIA-CYCLO(2,2,1)HEPTANE-5-OXIDE	Bulb				Dorsch, W., et al. 1988. Anti-Asthmatic Effects of Onions. Alk(en)ylsulfinothioic Acid Alk(en)yl-Esters Inhib. Histamine Rel. Leukotriene & Thromboxane Biosyn. in Vitro and Counteract PAF & Allergen-Ind. Bronch. Obst. in Vivo. Biochem. Pharmacol., 37:4479-4486.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2,3-DIMETHYLTHIOPHENE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. Nippon Eiyō Shokuryō Gakkaishi, 37(4): 343-347.
0	PHYTOHORMONE	Bulb				--
0	METHYLPROPYL-TRISULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
0	GIBBERELLIN-A-4	Root				Das, V. S. R., Rao, J. V. S. 1965. Onion Root Gibberellins. Curr. Sci., 34(1): 28.
0	METHYL-METHANE-THIOSULFINATE	Fruit Juice				Schmidt, N. E., et. al. 1996. Rapid Extraction Method of Quantitating the Lachrymatory Factor of Onion Using Gas Chromatography. J. Agric. Food Chem., 44(9): 2690-2693.
0	METHYL-PROPYL-DISULFIDE	Bulb				--
0	BRASSICASTEROL	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Fecs. Int. Conf. Chem. Biotechnol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
0	ALLIIN-GAMMA-GLUTAMYL-PEPTIDE	Bulb				Ueda, Y., Taubuku, T., Miyajima, R. 1994. Composition of Sulfur-Containing Components in Onion and Their Flavor Characters. Biosci. Biotech. Biochem., 58(1): 108-110.
28	DIALLYL-TRISULFIDE	Essential Oil				Schultz, O. E., Mohrmann, H. L. 1965. Analysis of Constituents of Garlic <i>Allium sativum</i> . II. Gas Chromatography of Garlic Oil. Pharmazie, 20(7): 441-447.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TSEPOSIDES	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Fecs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
16	ACETIC-ACID	Bulb				Wilkins, W. F. 1964. Isolation and Identification of the Lachrymogenic Compound of Onion. Cornell Univ., Agr. Expt. Sta. Mem. No., 385: 31 pp.
0	SELENO-HOME-CYSTINE	Plant				--
0	31-NORCYCLOARTENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	ALLYL-PROPENYL-DISULFIDE	Bulb				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	GAMMA-GLUTAMYL-PHENYLALANINE	Bulb				--
0	QUERCETIN-3-O-SOPHOROSIDE-7-O-GLUCURONIDE	Epidermis				Urushibara, S. I., Kitayama, Y., Watanabe, T., Okuno, T., Watarai, A., Matsumoto, T. 1992. New Flavonol Glycosides, Major Determinants Inducing the Green Fluorescence in the Guard Cells of <i>Allium cepa</i> . Tetrahedron Lett., 33(9): 1213-1216.
0	CYANIDIN-3-O-LAMINARIOBIOSIDE	Bulb				Du, C. T., Wang, P. L., Francis, F. J. 1974. Cyanidin-3-Laminariobioside in Spanish Red Onion (<i>Allium cepa</i>). J. Food Science, 39: 1265-.
0	CYANIDIN-BIOSIDE	Bulb				Fuleki, T. 1969. The Anthocyanins of Strawberry, Rhubarb, Radish, and Onion. J. Food Sci., 34(4): 365-369.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	STIGMASTEROL	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Fecs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
0	CEPAENE-2-B	Bulb				Bayer, T., Wagner, H., Wray, V., Dorsch, W. 1988. Inhibitors of Cyclo-Oxygenase and Lipoxygenase in Onions. Lancet, 8616: 906.
24	ETHANOL	Bulb				--
0	TRANS-1-(1-PROPENYL-DITHIO)-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
0	PROPANAL	Bulb				Wealth of India.
10	ALPHA-AMYRIN	Bulb				Smocziewiczowa, A., Nitschke, D. 1978. Study of Saponins and Sapogenins in Onions. Zesz Nauk Akad Ekon Poznaniu Ser, 1(73): 40-43.
0	CIS-PROPANETHIAL-S-OXIDE	Bulb				Block, E., Penn, R. E., Reville, L. K. 1979. Structure and Origin of the Onion Lachrymatory Factor. A Microwave Study. J. Amer. Chem. Soc., 101: 2200-2201.
0	CIS-1-(PROPENYL-DITHIO)-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
0	2,3-DIMETHYL-5,6-DITHIA-BICYCLO(2,2,1)HEXANE-5-OXIDE	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHIONINE-METHYLSULFONIUM-SALT	Bulb				Renis, H. E., Henze, R. E. 1957. Studies on Sulfur Compounds from Onion. Diss. Abstr. Int. B, 17: 1456-1457.
0	GAMMA-L-GLUTAMYL-VALINE	Bulb				--
47	BETA-SITOSTEROL	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Feccs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
0	METHYL-PROPENYL-TRISULFIDE	Plant				--
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.
25	DIALLYL-SULFIDE	Essential Oil				Schultz, O. E., Mohrmann, H. L. 1965. Analysis of Constituents of Garlic Allium sativum. II. Gas Chromatography of Garlic Oil. Pharmazie, 20(7): 441-447.
0	ACETAL	Bulb				Wilkens, W. F. 1962. The Isolation and Identification of the Lachrymogenic Compound of Onion. Diss. Abstr. Int. B, 22: 3978.
0	DIPROPENYL-SULFIDE	Bulb				Wealth of India.
0	3,4-DIMETHYLTHIOPHENE	Bulb				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	RIBOSE	Bulb				Sinha, A. 1959. Chemical Examination of Allium cepa. I. Glycosidic and Sugar Fractions. Indian J. Appl. Chem., 22: 89-91.
2	ALLYLMETHYLSULFIDE	Bulb				Wealth of India.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PAEONIDIN-GLYCOSIDE	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	DIMETHYL-TRISULFIDE	Bulb				Carson, J. F., Wong, F. F. 1961. The Volatile Flavor Components of Onions. J. Agric. Food Chem., 9(2): 140-143.
0	GAMMA-GLUTAMYL-LEUCINE	Bulb				Virtanen, A. I., Matikkala, B. J. 1961. New gamma-l-glutamyl Petides in Onion (<i>Allium cepa</i>). III. Suomen Kemistilehti, 34B: 53-54.
1	PYRUVIC-ACID	Bulb				Malkki, Y., Nikkila, O. E., Aalto, M. 1978. The Composition and Aroma of Onions and Influencing Factors. J. Sci. Agr. Soc. Finland, 50: 103-.
15	MALIC-ACID	Leaf				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.
0	SELENO-HOMOCYSTINE	Plant				Hamilton, J. W. 1975. Chemical Examination of Seleniferous Onions, <i>Allium cepa</i> . Adv. Front Plant Sci., 30: 189-.
0	CYANIDIN-3-O-LAMINARIBIOSIDE	Bulb				--
12	STIGMASTEROL	Seed Oil				Grujic-Injac, B., Basarevic-Dinic, L., Lajsic, S., Stefanovic, D. 1985. Chemical Analysis of Seed Oil of the Onion (<i>Allium cepa</i>). Hrana Ishrana, 25: 167-169 (Inst Ishr Vet Fak Belgrade, Yugoslavia)
0	CEPAENE-2-A	Bulb				Bayer, T., Wagner, H., Wray, V., Dorsch, W. 1988. Inhibitors of Cyclo-Oxygenase and Lipoxygenase in Onions. Lancet, 8616: 906.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KAEMPFEROL-4'-O-BETA-D-GLUCOSIDE	Bulb				--
3	ALLYL-PROPYL-DISULFIDE	Bulb				--
0	2-PROPENYL-L-CYSTEINE-SULFOXIDE	Bulb				Thomas, D. J., Parkin, K. L. 1994. Quantification of Alk(en)yl-L-Cysteine Sulfoxides and Related Amino Acids in Alliums by High-Performance Liquid Chromatography. J. Agr. Food Chem., 42(8): 1632-1638.
9	SINAPIC-ACID	Bulb				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	2,3-DIMETHYL-(DL)-BUTANE-CIS-1-CIS-DITHIAL-S,S'-DIOXIDE	Bulb				Block, R., Bayer, T. 1990. (z,z)-d-1,2,3-dimethyl-1,4-butanedithial-s,s'-dioxide: A Novel Biologically Active Organosulfur Compound from Onion. J. Amer. Chem. Soc., 112(11): 4584-4585.
12	PYROCATECHOL	Bulb				Hermann, K. 1958. Flavonols and Phenols of the Onion (<i>Allium cepa</i>). Arch. Pharm. (Weinheim), 291: 238-247.
16	P-CYMENE	Fruit Juice				Schmidt, N. E., et. al. 1996. Rapid Extraction Method of Quantitating the Lachrymatory Factor of Onion Using Gas Chromatography. J. Agric. Food Chem., 44(9): 2690-2693.
0	GAMMA-L-GLUTAMYL-S-(2-CARBOXY-BETA-METHYLETHYL)-CYSTEINYL-GLYCINE-ETHYL-ESTER	Bulb				--
47	BETA-SITOSTEROL	Seed Oil				Grujic-Injac, B., Basarevic-Dinic, L., Lajsic, S., Stefanovic, D. 1985. Chemical Analysis of Seed Oil of the Onion (<i>Allium cepa</i>). Hrana Ishrana, 25: 167-169 (Inst Ishr Vet Fak Belgrade, Yugoslavia)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-DITHIO-METHANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
0	BETA-TOCOPHEROL	Seed				--
28	ADENOSINE	Bulb				--
26	DIALLYL-DISULFIDE	Essential Oil				Schultz, O. E., Mohrmann, H. L. 1965. Analysis of Constituents of Garlic <i>Allium sativum</i> . II. Gas Chromatography of Garlic Oil. Pharmazie, 20(7): 441-447.
3	ABSCISSIC-ACID	Bulb				--
0	SAPONIN	Bulb				--
0	DIPROPENYL-DISULPHIDE	Bulb				Wealth of India.
2	ALLYL-METHYL-DISULFIDE	Bulb				Wealth of India.
0	DIMETHYLTETRASULFIDE	Essential Oil				--
7	FUMARIC-ACID	Bulb				--
43	PROTocatechuic-acid	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
4	TRANS-TRANS-5-ETHYL-4,6,7-TRITHIA-2,8-DECADIENE-4-S-OXIDE	Bulb				--
15	MALIC-ACID	Bulb				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.
0	METHYL-CIS-PROPENYL-DISULFIDE	Bulb				Wealth of India.
0	CYANIDIN-3-O-BETA-D-DIGLYCOSIDE	Bulb				--
6	TARTARIC-ACID	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	3,4-DIMETHYL-2,5-DIOXO-2,5-DIHYDROTHIOPHENE	Bulb				--
0	METHYL-CIS-PROPENYL-TRISULFIDE	Bulb				--
0	PROPAN-1-OL	Bulb				--
0	KAEMPFEROL-3-O-SOPHOROSIDE-7-O-GLUCURONIDE	Epidermis				Urushibara, S. I., Kitayama, Y., Watanabe, T., Okuno, T., Watarai, A., Matsumoto, T. 1992. New Flavonol Glycosides, Major Determinants Inducing the Green Fluorescence in the Guard Cells of <i>Allium cepa</i> . <i>Tetrahedron Lett.</i> , 33(9): 1213-1216.
0	HEXADECEN-1-OL	Seed				--
0	CEPAENE-1	Bulb				--
0	EICOSEN-1-OL	Seed				--
9	OXALIC-ACID	Leaf				Gad, S. S., Esmat El-Zalaki, M., Hohamed, M. S., Mohasseb, S. Z. 1982. Oxalate Content of Some Leafy Vegetables and Dry Legumes Consumed Widely in Egypt. <i>Food Chem.</i> , 8(3): 169-177. (Coll. Agric. Alexandria Univ. Ale.)
0	KAEMPFEROL-4',7-DI-O-BETA-D-GLUCOSIDE	Bulb				Tissut, M., Ravanel, P. 1980. Assessment of Flavonols in Adult Leaves of Several Vegetative Vacuoles. <i>Phytochemistry</i> , 19: 2077-2081.
0	1-PROPYLTRITHIO-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. <i>J. Agric. Food Chem.</i> , 28(5): 1037-1038.
0	GAMMA-L-GLUTAMYL-S-(2-CARBOXY-BETA-METHYLETHYL)-CYSTEINYL-GLYCINE	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
32	ALPHA-TOCOPHEROL	Seed Oil				Grujic-Injac, B., Basarevic-Dinic, L., Lajsic, S., Stefanovic, D. 1985. Chemical Analysis of Seed Oil of the Onion (<i>Allium cepa</i>). <i>Hrana Ishrana</i> , 25: 167-169 (Inst Ishr Vet Fak Belgrade, Yugoslavia)
0	METHYL-CIS-PROPENYL-DISULFIDE	Plant				--
0	ACE-AMP-1	Seed				Tassin, S., et. al. 1998. Solution Structure of Ace-Amp1, a Potent Antimicrobial Protein Extracted from Onion Seeds. Structural Analogies with Plant Nonspecific Lipid Transfer Proteins. <i>Biochemistry</i> , 37(11): 3623-3637.
0	D-MANNITOL	Bulb				--
0	TRANS-S-(1-PROPENYL)-CYSTEINE-SULFOXIDE	Bulb				Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	9,10,13-TRIHYDROXY-OCTADEC-11-ENOIC-ACID	Bulb				--
0	S-PROPYL-CYSTEINE-SULFOXIDE	Bulb				Renis, H. E., Henze, R. E. 1957. Studies on Sulfur Compounds from Onion. <i>Diss. Abstr. Int. B</i> , 17: 1456-1457.
0	DIMETHYL-FURAN	Essential Oil				Wealth of India.
25	P-COUMARIC-ACID	Root				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. <i>Curr. Sci.</i> , 33(15): 471-472.
0	RHAMNOSE	Bulb				Sinha, A. 1959. Chemical Examination of <i>Allium cepa</i> . I. Glycosidic and Sugar Fractions. <i>Indian J. Appl. Chem.</i> , 22: 89-91.
0	5-METHYL-2-N-HEXYL-2,3-DIHYDROFURAN-3-ONE	Bulb				Wealth of India.
25	P-COUMARIC-ACID	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIMETHYL-PENTASULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
8	FRUCTOSE	Bulb				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	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	TRIDECAN-2-ONE	Bulb				Wealth of India.
112	ASCORBIC-ACID	Bulb				--
0	DIPROPYL-TRISULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
0	28-ISOFUCOSTEROL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	METHANETHIOL	Bulb				Wealth of India.
0	PROP-TRANS-ENYL-PROPYL-TRISULFIDE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. Nippon Eiyo Shokuryo Gakkaishi, 37(4): 343-347.
7	GLUTATHIONE	Bulb				Ueda, Y., Taubuku, T., Miyajima, R. 1994. Composition of Sulfur-Containing Components in Onion and Their Flavor Characters. Biosci. Biotech. Biochem., 58(1): 108-110.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GRAMISTEROL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. <i>Phytochemistry</i> , 16: 140-141.
4	SPIRAEOSIDE	Epidermis				Ito, Y., Ono, M., Masuoka, C., Yahara, S., Nohara, T. 1995. Hyaluronidase Inhibitors of Onion (<i>Allium cepa</i> L.) Skin. <i>Kyushu Tokai Daigaku Nogakubu Kiyo</i> , 14: 43-48.
1	N-PROPYL-MERCAPTAN	Bulb				Nishimura, H., Mizutani, J. 1975. Effect of Gamma-Irradiation on Development of Lachrymator of Onion. <i>Agric. Biol. Chem.</i> , 39: 2245-.
0	DIPROPYL-TRISULFIDE	Bulb				--
6	MYRISTIC-ACID	Seed Oil				Reddy, P. N., Azeemoddin, G., Rao, S. D. T. 1989. Processing and Analysis of Onionseed (<i>Allium cepa</i>) and its Fixed Oil. <i>J. Amer. Oil Chem. Soc.</i> , 66(3): 365.
0	NORCEPANONE	Bulb				Wealth of India.
0	KAEMPFEROL-3,4'-DI-O-BETA-D-GLUCOSIDE	Bulb				Tissut, M., Ravanel, P. 1980. Assessment of Flavonols in Adult Leaves of Several Vegetative Vacuoles. <i>Phytochemistry</i> , 19: 2077-2081.
0	3,4-DIMETHYLTHIOPHENE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. <i>J. Agric. Food Chem.</i> , 28(5): 1037-1038.
0	1-O-P-COUMAROYL-BETA-D-GLUCOSE	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2,4-DIMETHYLTHIOPHENE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
0	METHYL-ALLIIN	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	4-HYDROXY-BENZOIC-ACID	Root				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	TRANS-3,5-DIETHYL-1,2,4-TRITHIOLANE	Leaf				Chemical Constituents of Oriental Herbs (3 diff. books)
0	9,12,13-TRIHYDROXY-OCTADEC-10-ENOIC-ACID	Bulb				--
0	DIISOPROPYL-TRISULFIDE	Bulb				Wealth of India.
25	P-COUMARIC-ACID	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	GAMMA-L-GLUTAMYL-S-(1-PROPENYL)L-CYSTEINE-SULFOXIDE	Bulb				--
5	SAPONINS	Bulb				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	DI-N-PROPYL-DISULFIDE	Bulb				Wilkins, W. F. 1962. The Isolation and Identification of the Lachrymogenic Compound of Onion. Diss. Abstr. Int. B, 22: 3978.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PROSTAGLANDIN-E-1	Bulb				Ustunes, L., Claeys, M., Laekeman, G., Herman, A.G., Vlietinck, A.J., Ozer, A. 1985. Isolation and Identification of Two Isomeric Trihydroxy Octadecenoic Acids with Prostaglandin E-Like Activity from Onion Bulbs(<i>Allium cepa</i>). <i>Prostaglandins</i> , 29(5):847-865
4	TRANS-N-PROPYLSULPHINOTHIOIC-ACID-S-1-PROPENYLESTER	Bulb				--
0	3,4-DIMETHYL-2,5-DIOXO-2,5-DIHYDROTHIOPHENE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. <i>J. Agric. Food Chem.</i> , 28(5): 1037-1038.
14	SUCROSE	Bulb				Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. <i>Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.</i>
0	24-METHYLENE-CYCLOARTENOL	Bulb				--
1	RAFFINOSE	Bulb				Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. <i>Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.</i>
0	PROP-TRANS-ENYL-PROPYL-DISULFIDE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. <i>Nippon Eiyo Shokuryo Gakkaishi</i> , 37(4): 343-347.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	GLUTAMIC-ACID	Bulb				Thomas, D. J., Parkin, K. L. 1994. Quantification of Alk(en)yl-L-Cysteine Sulfoxides and Related Amino Acids in Alliums by High-Performance Liquid Chromatography. J. Agr. Food Chem., 42(8): 1632-1638.
4	GLYCOLIC-ACID	Bulb				Balansard, J., Arnoux, M. 1951. A Study of the Hepato-Renaldiuretics. III. The Active Principle of Onion Juice. Med. Trop. (Marseille), 11: 632-634.
9	SINAPIC-ACID	Root				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	MYROSINASE	Bulb				--
4	CALCIUM-OXALATE	Bulb				Walter-Levy, L., Strauss, R. 1954. Inorganic Deposits in Plants. C. R. Acad. Sci., 239: 897-.
2	CAMPESTEROL	Seed				Kintia, P. K., Degtiarova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Fecs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
0	DIPROPYL-DISULPHIDE	Bulb				--
0	METHYL-PROPYL-TETRASULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
0	NEODECANOIC-ACID	Bulb				Wealth of India.
0	ABSCISIC-ACID	Bulb				Karmelyuk, L. V., Fel'dman, A. L., Gusar, Z. D., Markh, A. T., Korableva, N. P. 1982. Determination of Abscisic Acid in Common Onion Tissues. Fiziol Biokhim Kul't Rast, 14: 295-298.
1	CHOLESTEROL	Bulb				--
0	1-O-FERULOYL-BETA-D-GLUCOSE	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-TOCOPHEROL	Seed Oil				Grujic-Injac, B., Basarevic-Dinic, L., Lajsic, S., Stefanovic, D. 1985. Chemical Analysis of Seed Oil of the Onion (<i>Allium cepa</i>). <i>Hrana Ishrana</i> , 25: 167-169 (Inst Ishr Vet Fak Belgrade, Yugoslavia)
0	METHIONINE-SULFONE	Bulb				Renis, H. E., Henze, R. E. 1957. Studies on Sulfur Compounds from Onion. <i>Diss. Abstr. Int. B</i> , 17: 1456-1457.
0	4-HYDROXY-BENZOIC-ACID	Bulb				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. <i>Curr. Sci.</i> , 33(15): 471-472.
13	CYSTEINE	Bulb				Ueda, Y., Taubuku, T., Miyajima, R. 1994. Composition of Sulfur-Containing Components in Onion and Their Flavor Characters. <i>Biosci. Biotech. Biochem.</i> , 58(1): 108-110.
0	TRANS-2,3-DIMETHYL-5,6-DITHIA-CYCLO(2,2,1)HEPTANE-5-OXIDE	Bulb				Dorsch, W., et. al. 1988. Anti-Asthmatic Effects of Onions. Alk(en)ylsulfinothioic Acid Alk(en)yl-Esters Inhib. Histamine Rel. Leukotriene & Thromboxane Biosyn. in Vitro and Counteract PAF & Allergen-Ind. Bronch. Obst. in Vivo. <i>Biochem. Pharmacol.</i> , 37:4479-4486.
0	6(G)-BETA-FRUCTOSYL-SUCROSE	Bulb				Bacon, J. S. D. 1959. Trisaccharide Fraction of Some Monocotyledons. <i>Biochem. J.</i> , 73: 507-514.
2	S-METHYL-CYSTEINE-SULFOXIDE	Bulb				Kumari, K., Augusti, K. T. 1995. Antidiabetic Effects of S-Methylcysteine Sulphoxide on Alloxan Diabetes. <i>Planta Medica</i> , 61(1): 72-74.
4	CIS-N-PROPYLSULPHINOTHIOIC-ACID-S-1-PROPENYLESTER	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-L-GLUTAMYL-L-ARGININE	Bulb				Matikkala, E. J., Virtanen, A. I. 1970. Isolation of gamma-l-glutamyl-L-arginine and gamma-l-glutamyl-s-(2-carboxy-n-propyl)-L-cysteine from <i>Allium cepa</i> (Onion). Suomen Kemistilehti, 43(11): 435-438.
0	GAMMA-L-GLUTAMYL-S(2-CARBOXY-N-PROPYL)L-CYSTEINE	Bulb				--
5	ZEAXANTHIN	Bulb				Granado, F., Olmedilla, B., Blanco, I., Rojas-Hidalgo, E. 1992. Carotenoid Composition in Raw and Cooked Spanish Vegetables. J. Agr. Food Chem., 40(11): 2135-2140.
0	CYCLOARTANOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	PROSTAGLANDIN-B	Bulb				Pobozsny, K., Tetenyi, P., Hethelyi, I., Kocsar, L., Mann, V. 1979. Biologically Active Substances: Investigations into the Prostaglandin Content of <i>Allium</i> Species. I. Herba Hung, 18(2): 71-81.
4	TRANS-METHYLSULPHINOTHIOIC-ACID-S-1-PROPENYLESTER	Bulb				--
0	LOPHENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
5	24-METHYLENE-CYCLOARTANOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
7	SUCCINIC-ACID	Bulb				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2-METHYL-PENT-2-EN-1-AL	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. <i>J. Agric. Food Chem.</i> , 28(5): 1037-1038.
1	QUINIC-ACID	Bulb				--
1	ISORHAMNETIN-3-GLUCOSIDE	Bulb				--
0	PROP-CIS-ENYL-PROPYL-TRISULFIDE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. <i>Nippon Eiyo Shokuryo Gakkaishi</i> , 37(4): 343-347.
7	GLUCOSE	Leaf				Osman, S. A. 1980. Chemical and Biological Studies of Onion and Garlic in an Attempt to Isolate a Hypoclycaemic Extract. <i>Abstr. 4th Asian Symp. Med. Plants Spices Bangkok, Thailand, September 15-19: 117.</i>
9	SINAPIC-ACID	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. <i>Curr. Sci.</i> , 33(15): 471-472.
102	CAFFEIC-ACID	Root				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. <i>Curr. Sci.</i> , 33(15): 471-472.
0	METHYL-PROPYL-DISULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. <i>Pharmazie</i> , 47(6): 455-456.
4	N-PROPYLSULPHINOTHIOIC-ACID-S-N-PROPYLESTER	Bulb				--
0	CHOLEST-7-EN-3-BETA-OL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. <i>Phytochemistry</i> , 16: 140-141.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	1-O-CAFFEoyL-BETA-D-GLUCOSE	Leaf				--
0	4-HYDROXY-BENZOIC-ACID	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
3	CYCLOEUCALENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	TRANS-1-(PROPENYL-DITHIO)-PROPANE	Essential Oil				--
2	5-OCTYL-CYCLOPENTA-1,3-DIONE	Bulb				--
0	S-METHYL-CYSTEINE	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.
4	CIS-METHYLSULPHINOTHIOIC-ACID-S-1-PROPENYLESTER	Bulb				--
0	PEROXIDASE	Bulb				--
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.
0	GAMMA-L-GLUTAMYL-ISOLEUCINE	Bulb				--
0	2,5-DIMETHYLTHIOPHENE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
0	METHIONINE-METHYLSULFONIUM	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-L-GLUTAMYL-L-VALINE	Bulb				Virtanen, A. I., Matikkala, B. J. 1961. New gamma-l-glutamyl Petides in Onion (<i>Allium cepa</i>). III. Suomen Kemistilehti, 34B: 53-54.
23	CITRIC-ACID	Leaf				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.
0	PROSTAGLANDIN-A	Bulb				Pobozsny, K., Tetenyi, P., Hethelyi, I., Kocsar, L., Mann, V. 1979. Biologically Active Substances: Investigations into the Prostaglandin Content of <i>Allium</i> Species. I. Herba Hung, 18(2): 71-81.
0	TRANS-CIS-5-ETHYL-4,6,7-TRITHIA-2,8-DECADIENE-4-S-OXIDE	Bulb				--
0	ARACHIDIC-ACID	Seed				--
0	ARACHIDIC-ACID	Seed Oil				Reddy, P. N., Azeemoddin, G., Rao, S. D. T. 1989. Processing and Analysis of Onionseed (<i>Allium cepa</i>) and its Fixed Oil. J. Amer. Oil Chem. Soc., 66(3): 365.
0	2-METHYL-BUTYR-2-ALDEHYDE	Bulb				Wilkins, W. F. 1964. Isolation and Identification of the Lachrymogenic Compound of Onion. Cornell Univ., Agr. Expt. Sta. Mem. No., 385: 31 pp.
0	ISOPROPYL-PROPYL-TRISULFIDE	Bulb				Wealth of India.
0	PROP-CIS-ENYL-PROPYL-DISULFIDE	Bulb				Kimura, K., Nishimura, H., Kimura, I., Iwata, I., Mizutani, J. 1984. Flavor Components of Roasted Onion. I. Changes in Flavor Components of Onion by Roasting. Nippon Eiyō Shokuryō Gakkaishi, 37(4): 343-347.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GLUCOFRUCTAN	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	GLUTAN	Bulb				--
0	SATIOMEM	Bulb				Upreti, R. K., Ahmad, S., Shukla, S., Kidwai, A. M. 1994. Experimental Anorexigenic Effect of a Membrane Proteoglycan Isolated from Plants. J. Ethnopharmacology, 42(1): 53-61.
102	CAFFEIC-ACID	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	DIMETHYL-TRISULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
2	METHANOL	Leaf				Burtsev, A. F., Pashchenko, T. W., Rik, G. R. 1974. Mass-Spectrometric Analysis of Volatile Phytonocide Substances of Cucumber and Common Onion Leaves. Fiziol Biokhim Kul't Rast, 6: 516-.
0	CEPOSIDE-D	Seed				--
0	SELENOSIDE	Plant				--
0	1-METHYLTRITHIO-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
20	BENZYL-ISOTHIOCYANATE	Bulb				Dorsch, W., Adam, O., Weber, J., Ziegeltrum, T. 1985. Antiasthmatic Effects of Onion Extracts - Detection of Benzyl- and Other Isothiocyanates (Mustard Oils) as Antiasthmatic Compounds of Plant Origin. Eur. J. Pharmacol., 107(1): 17-24.
0	2-METHYL-BUT-2-EN-1-AL	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. J. Agric. Food Chem., 28(5): 1037-1038.
7	CYCLOARTENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
2	5-HEXYL-CYCLOPENTA-1,3-DIONE	Bulb				--
0	S-ALLYL-CYSTEINE	Bulb				Renis, H. E., Henze, R. E. 1957. Studies on Sulfur Compounds from Onion. Diss. Abstr. Int. B, 17: 1456-1457.
0	CEPANONE	Bulb				Wealth of India.
0	PENTOSAN	Bulb				--
61	FERULIC-ACID	Root				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. Curr. Sci., 33(15): 471-472.
0	GAMMA-L-GLUTAMYL-CYSTEINE	Bulb				Virtanen, A. I., Matikkala, B. J. 1961. New gamma-l-glutamyl Petides in Onion (<i>Allium cepa</i>). III. Suomen Kemistilehti, 34B: 53-54.
0	SODIUM-PROP-TRANS-1-ENYL-THIOSULFATE	Bulb				Yamato, O., Yoshihara, T., Ichihara, A., Maede, Y. 1994. Novel Heinz Body Hemolysis Factors in Onion (<i>Allium cepa</i>). Biosci. Biotech. Biochem., 58(1): 221-222.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CIS-ZWEIBELANE	Bulb				Calvey, E. M., Matusik, J. E., White, K. D., Betz, J. M., Block, E., Littlejohn, M. H., Naganathan, S., Putman, D. 1994. Off-Line Supercritical Fluid Extraction of Thiosulfinates from Garlic and Onion. J. Agric. Food Chem., 42(6): 1335-1341.
64	OLEANOLIC-ACID	Bulb				--
1	CHOLESTEROL	Seed				Kintia, P. K., Degtiarova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Fecs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
2	PROPIONALDEHYDE	Leaf				Burtsev, A. F., Pashchenko, T. W., Rik, G. R. 1974. Mass-Spectrometric Analysis of Volatile Phytonocide Substances of Cucumber and Common Onion Leaves. Fiziol Biokhim Kul't Rast, 6: 516-.
4	TRANS-5-ETHYL-4,6,7-TRITHIA-2-DECENE-4-S-OXIDE	Bulb				--
0	ARABINOSE	Bulb				Sinha, A. 1959. Chemical Examination of Allium cepa. I. Glycosidic and Sugar Fractions. Indian J. Appl. Chem., 22: 89-91.
0	9,10,13-TRIHYDROXY-OCTADEC-11-ENOIC-ACID	Bulb				--
23	CITRIC-ACID	Bulb				Soldatenkov, S. V., Mazurova, T. A., Ranteleev, A. N. 1960. Organic Acids of Onion and Spinach. Trudy Petergof Biol. Inst., Leningrad Gosudarst Univ Im AA Zhdanova, 18: 55-61.
0	2-METHYL-BUT-2-EN-1-AL	Bulb				Wilkins, W. F. 1962. The Isolation and Identification of the Lachrymogenic Compound of Onion. Diss. Abstr. Int. B, 22: 3978.
0	ISOPROPYL-PROPYL-DISULFIDE	Bulb				Wealth of India.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-GLUTAMYL-S-BETA-CARBOXY-BETA-METHYL-ETHYL-CYSTEINYL-GLYCINE	Bulb				Virtanen, A. I., Matikkala, E. J. 1960. New Gamma-Glutamyl Peptides in Onion (<i>Allium cepa</i>). I. Gamma-glutamylphenylalanine and gamma-glutamyl-s-(beta-carboxy-beta-methylethyl)-cysteinylglycine. Suomen Kemistilehti, 33B: 83-84.
5	GLUTAMINE	Bulb				--
0	N-PROPYL-N-PROPANE-THIOSULFINATE	Fruit Juice				Schmidt, N. E., et. al. 1996. Rapid Extraction Method of Quantitating the Lachrymatory Factor of Onion Using Gas Chromatography. J. Agric. Food Chem., 44(9): 2690-2693.
102	CAFFEIC-ACID	Bulb				--
3	ALLYL-PROPYL-DISULFIDE	Essential Oil				Wilcox, B. F., Joseph, P. K., Augusti, K. T. 1984. Effects of Allylpropyl Disulphide Isolated from <i>Allium cepa</i> Linn. on High-Fat Fed Rats. Indian J. Biochem. Biophys., 21(3): 214-216.
2	DIMETHYL-SULFIDE	Essential Oil				Schultz, O. E., Mohrmann, H. L. 1965. Analysis of Constituents of Garlic <i>Allium sativum</i> . II. Gas Chromatography of Garlic Oil. Pharmazie, 20(7): 441-447.
23	MELATONIN	Bulb				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.
21	ALLIIN	Bulb				--
0	CEPAENES	Bulb				--
0	SELENO-METHYL-SELENOMETHIONINE	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	1-METHYLDITHIO-PROPANE	Essential Oil				Albrand, M., Dubois, P., Etievant, P., Gelin, R., Tokarska, B. 1980. Identification of a New Volatile Compound in Onion (<i>Allium cepa</i>) and Leek (<i>Allium porum</i>): 3,4-dimethyl-2,5-dioxo-2,5-dihydrothiophene. <i>J. Agric. Food Chem.</i> , 28(5): 1037-1038.
2	PROPIONALDEHYDE	Bulb				Wilkens, W. F. 1964. Isolation and Identification of the Lachrymogenic Compound of Onion. <i>Cornell Univ., Agr. Expt. Sta. Mem. No.</i> , 385: 31 pp.
3	CYCLOALLIIN	Bulb				--
0	5-DEHYDRO-AVENASTEROL	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. <i>Fecs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod.</i> , (Proc.) 3rd: 166-170.
0	S-(BETA-CARBOXYBETA-METHYL-ETHER)-CYSTEINE	Bulb				--
30	ANTHOCYANINS	Bulb				Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PELARGONIDIN-MONOGLYCOSIDE	Bulb				Fuleki, T. 1969. The Anthocyanins of Strawberry, Rhubarb, Radish, and Onion. <i>J. Food Sci.</i> , 34(4): 365-369.
61	FERULIC-ACID	Leaf				Das, V. S. R., Rao, J. V. S. 1964. Phenolic Acids of Onion Plant. <i>Curr. Sci.</i> , 33(15): 471-472.
0	GAMMA-L-GLUTAMYL-ARGININE	Bulb				--
0	SODIUM-PROP-CIS-1-ENYL-THIOSULFATE	Bulb				Yamato, O., Yoshihara, T., Ichihara, A., Maede, Y. 1994. Novel Heinz Body Hemolysis Factors in Onion (<i>Allium cepa</i>). <i>Biosci. Biotech. Biochem.</i> , 58(1): 221-222.
2	METHANOL	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	S-(BETA-CARBOXY-BETA-METHYL-ETHYL)-CYSTEINE	Bulb				Virtamen, A. I., Matikkala, E. J. 1960. New Gamma-Glutamyl Peptides in Onion (<i>Allium cepa</i>). I. Gamma-glutamylphenylalanine and gamma-glutamyl-s-(beta-carboxy-beta-methylethyl)-cysteinylglycine. Suomen Kemistilehti, 33B: 83-84.
0	SUGARS	Bulb				Malkki, Y., Nikkila, O. E., Aalto, M. 1978. The Composition and Aroma of Onions and Influencing Factors. J. Sci. Agr. Soc. Finland, 50: 103-.
0	NONADECANOIC-ACID	Bulb				Gilbert, M. D., Maylin, G. A., Lisk, D. J. 1976. Gas Chromatographic Analysis of Neodecanoic Acids in Onions. J. Agr. Food Chem., 24(1): 194-.
0	CEPAENE-4-B	Bulb				Bayer, T., Wagner, H., Wray, V., Dorsch, W. 1988. Inhibitors of Cyclo-Oxygenase and Lipoxygenase in Onions. Lancet, 8616: 906.
11	ISORHAMNETIN	Bulb				Park, Y. K., Lee, C. Y. 1996. Identification of Isorhamnetin 4'-Glucoside in Onions. J. Agric. Food Chem., 44(1): 34-36.
0	SELENO-METHYL-SELENOMETHIONINE	Plant				Hamilton, J. W. 1975. Chemical Examination of Seleniferous Onions, <i>Allium cepa</i> . Adv. Front Plant Sci., 30: 189-.
0	CIS-PROPANETHIOL-S-OXIDE	Bulb				--
0	STIGMAST-7-EN-3-BETA-OL	Seed				Kintia, P. K., Degtiaryova, L. P., Balashova, N. N., Shvets, S. A. 1987. Sterols and Steroidal Glycosides of Bulb Onion Seeds. Feccs. Int. Conf. Chem. Biotechol. Biol. Act. Nat. Prod., (Proc.) 3rd: 166-170.
0	2,5-DIMETHYLTHIOPHENE	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	ETHYLENE	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.
15	ALPHA-LINOLENIC-ACID	Bulb				Ustunes, L., Claeys, M., Laekeman, G., Herman, A.G., Vlietinck, A.J., Ozer, A. 1985. Isolation and Identification of Two Isomeric Trihydroxy Octadecenoic Acids with Prostaglandin E-Like Activity from Onion Bulbs(<i>Allium cepa</i>). Prostaglandins, 29(5):847-865
7	GLUCOSE	Bulb				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	N-PROPYL-METHANE-THIOSULFINATE	Fruit Juice				Schmidt, N. E., et. al. 1996. Rapid Extraction Method of Quantitating the Lachrymatory Factor of Onion Using Gas Chromatography. J. Agric. Food Chem., 44(9): 2690-2693.
0	ALLOSID-B	Bulb				Aizikov, M. I., Kravets, S. D., Prokhorova, I. R., Kurmukov, A. G. 1995. Structure and Hypolipidemic Activity of Alloside B Isolated from Onion. Khim Farm ZH, 29(8): 34-35.
2	DIMETHYL-DISULFIDE	Bulb				--
0	TULIPOSIDE-B	Root				Slob, A., Jekel, B., De Jong, B., Schlatmann, E. 1975. On the Occurrence of Tuliposides in the Liliiflorae. Phytochemistry, 14: 1997-2005.
0	METHYL-TRANS-PROPENYL-TRISULFIDE	Bulb				Wealth of India.
67	ALLICIN	Bulb				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	XYLOSE	Bulb				Sinha, A. 1959. Chemical Examination of Allium cepa. I. Glycosidic and Sugar Fractions. Indian J. Appl. Chem., 22: 89-91.
22	CATECHOL	Bulb				Link, K. P., Walker, J. C. 1933. The Isolation of Catechol from Pigmented Onion Scales and its Significance in Relation to Disease Resistance in Onions. J. Biol. Chem., 100: 379-383.
0	SELENO-METHYL-SELENOCYSTEINE	Bulb				--
1	1-(METHYLSULFINYL)-PROPYL-METHYL-DISULFIDE	Bulb				--
0	PROPIONAL	Bulb				Wilkens, W. F. 1962. The Isolation and Identification of the Lachrymogenic Compound of Onion. Diss. Abstr. Int. B, 22: 3978.
0	THIOPROPIONAL-S-OXIDE	Bulb				--
0	4-ALPHA-METHYL-ZYMOSTENOL	Bulb				Itoh, T., Tamura, T., Mitsuhashi, T., Matsumoto, T. 1977. Sterols of Liliaceae. Phytochemistry, 16: 140-141.
0	ALLYLTHIOL-SULFIDE	Bulb				Wealth of India.
24	PECTIN	Bulb				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	DIPROPYLTETRASULFIDE	Essential Oil				Jirovetz, L., Koch, H. P., Jager, W., Remberg, G. 1992. Investigations of German Onion Oil by GC-FID, GC-MS and GC-FTIR. Pharmazie, 47(6): 455-456.
0	GAMMA-GLUTAMYL-S-METHYL-CYSTEINE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	SODIUM-PROPYL-THIOSULFATE	Bulb				Yamato, O., Yoshihara, T., Ichihara, A., Maede, Y. 1994. Novel Heinz Body Hemolysis Factors in Onion (Allium cepa). Biosci. Biotech. Biochem., 58(1): 221-222.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-L-GLUTAMYL-S-(1-PROPENYL)-CYSTEINE-SULFOXIDE	Bulb				Virtanen, A. I., Matikkala, E. J. 1961. Structure of the Gamma-Glutamyl Peptide 4 Isolated from Onion (<i>Allium cepa</i>)-gamma-l-glutamyl-s-(1-propenyl)-cysteine sulfoxide. Suomen Kemistilehti, 34B: 84.
0	CYANIDIN-MONOGLYCOSIDE	Bulb				Fuleki, T. 1969. The Anthocyanins of Strawberry, Rhubarb, Radish, and Onion. J. Food Sci., 34(4): 365-369.