

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

**Chemicals Found in *Vitis vinifera***

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
30	(+)-CATECHIN	Seed	--	--		
30	(+)-CATECHIN	Leaf	--	--		
30	(+)-CATECHIN	Pericarp	--	--		
7	(+)-GALLOCATECHIN	Leaf	--	--		
38	(-)-EPICATECHIN	Fruit	--	--		
38	(-)-EPICATECHIN	Pericarp	--	--		
38	(-)-EPICATECHIN	Leaf	--	--		
38	(-)-EPICATECHIN	Seed	--	--		
21	(-)-EPIGALLOCATECHIN	Leaf	--	--		
3	4-HYDROXYBENZALDEHYDE	Leaf	--	--		
3	ABSCISSIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	ACETIC-ACID	Fruit	1500	2000	-0.06645757225743394	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	ACETIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALANINE	Fruit	280	1440	-0.8911912580591054	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	ALPHA-AMYRIN	Stem	--	--		
7	ALPHA-CAROTENE	Fruit	--	--		
15	ALPHA-LINOLENIC-ACID	Fruit	390	2006	-0.24402755757732797	USDA's Ag Handbook 8 and sequelae)
23	ALPHA-TERPINEOL	Leaf Essent. Oil	108000	108000	1.3174552815097405	
32	ALPHA-TOCOPHEROL	Fruit	6	31	-0.6444565233542005	
5	ALUMINUM	Fruit	1	154	-0.1787194752035278	
5	ALUMINUM	Stem	1030	1030	0.044464754302322065	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	ANTHERAXANTHIN	Fruit	--	--		
10	ANTHOCYANIDINS	Pericarp	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
30	ANTHOCYANINS	Fruit	--	--		
30	ANTHOCYANINS	Pericarp	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
30	ANTHOCYANINS	Leaf	--	3000		Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
14	ARGININE	Fruit	490	2520	-0.47739653189299114	USDA's Ag Handbook 8 and sequelae)
2	ARSENIC	Fruit	0.001	0.889	0.6023550350459049	
112	ASCORBIC-ACID	Fruit	99	600	-0.24718280983607235	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
112	ASCORBIC-ACID	Leaf	3490	3870	-0.08483341087930922	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
112	ASCORBIC-ACID	Stem	310	310	-1.1858763373403332	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	ASPARTIC-ACID	Fruit	810	4167	-0.78714800256649	USDA's Ag Handbook 8 and sequelae)
1	ASTILBIN	Pericarp	--	--		
7	ASTRAGALIN	Leaf	--	--		
20	BENZOIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	BENZYL-ALCOHOL	Leaf	--	--		
9	BETA-AMYRIN	Stem	--	--		
9	BETA-AMYRIN	Leaf	--	--		
53	BETA-CAROTENE	Fruit	0.5	2.1	-0.14674136696680995	
53	BETA-CAROTENE	Stem	43	43	-0.5551411085990826	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
13	BETA-IONONE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
47	BETA-SITOSTEROL	Fruit	30	150	-0.5971588891273873	
47	BETA-SITOSTEROL	Seed	--	--		
14	BETAINE	Fruit Juice	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
22	BETULINIC-ACID	Root	--	--		
4	BIOTIN	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	BORON	Fruit	1	50	0.20278384568897864	
3	CADMIUM	Fruit	0.001	0.231	0.03526712239341311	
102	CAFFEIC-ACID	Fruit	--	--		
102	CAFFEIC-ACID	Leaf	--	--		
102	CAFFEIC-ACID	Root	--	--		
3	CAFFEOYL TARTARIC-ACID	Fruit	--	--		Jim Duke's personal files.
3	CAFTARIC-ACID	Fruit	--	--		
28	CALCIUM	Fruit	92	4774	0.2117719310786729	
28	CALCIUM	Stem	17700	17700	-0.11330590567075993	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	CAMPESTEROL	Plant	--	--		Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	CAMPESTEROL	Seed	--	--		
1	CATALASE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
43	CATECHIN	Seed	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CEPHALIN	Seed	--	--		
77	CHLOROGENIC-ACID	Fruit	--	1400	0.11655949578196001	
77	CHLOROGENIC-ACID	Shoot	--	--		
77	CHLOROGENIC-ACID	Leaf	--	--		
77	CHLOROGENIC-ACID	Root	--	--		
1	CHOLESTEROL	Fruit	--	--		
24	CHROMIUM	Fruit	0.005	0.385	-0.45355683651553846	
24	CHROMIUM	Stem	9	9	0.4664861453042604	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
60	CINNAMALDEHYDE	Fruit	--	--		
18	CINNAMIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	CIS-RESVERATROL	Fruit	--	--		
23	CITRIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
23	CITRIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	CITRONELLOL	Leaf	--	--		
1	CITROSTADIENOL	Stem	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	COBALT	Fruit	0.005	0.22	-0.5084821806978201	
2	COBALT	Stem	33	33	0.7427055671504605	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	CONIFERYL-ALDEHYDE	Fruit	--	--		
12	COPPER	Fruit	0.7	11.6	-0.09487047254583593	
57	COUMARIN	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	CRYPTOXANTHIN	Fruit	--	--		
7	CYANIDIN	Fruit	--	--		
7	CYANIDIN	Pericarp	--	--		
19	CYANIDIN-3-O-GLUCOSIDE	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
19	CYANIDIN-3-O-GLUCOSIDE	Leaf	--	--		Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
5	CYANIN	Tissue Culture	--	--		
7	CYCLOARTENOL	Stem	--	--		
2	CYSTINE	Fruit	110	566	-0.4853602292193013	USDA's Ag Handbook 8 and sequelae)
4	D-CATECHIN	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	D-CATECHIN	Leaf	--	--		
9	DELPHINIDIN	Plant	--	--		
1	DELPHINIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp	--	--		
2	DIETHYL-AMINE	Fruit Juice	--	--		
1	DIHYDROZEATIN	Resin, Exudate, Sap	--	--		
2	DIMETHYL-AMINE	Fruit Juice	--	--		
51	ELLAGIC-ACID	Fruit	--	--		
40	EPICATECHIN	Fruit	--	--		
40	EPICATECHIN	Seed	--	--		
1	EPICATECHIN-3-O-GALLATE	Fruit	--	--		
1	EPICATECHIN-3-O-GALLATE	Seed	--	--		
4	EPSILON-VINIFERIN	Leaf	30900	30900		
5	ERGOSTEROL	Fruit	--	--		
2	ERUCIC-ACID	Seed	--	--		
61	FERULIC-ACID	Fruit	--	--		
15	FIBER	Fruit	4210	24640	-1.104411552185134	USDA's Ag Handbook 8 and sequelae)
15	FOLACIN	Fruit	0.03	0.23	-0.7424982313124213	USDA's Ag Handbook 8 and sequelae)
13	FORMIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	FUMARIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
22	GABA	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	GALACTOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
62	GALLIC-ACID	Fruit	--	--		
62	GALLIC-ACID	Root	--	--		
62	GALLIC-ACID	Seed	--	--		
62	GALLIC-ACID	Leaf	--	--		
2	GAMMA-CAROTENE	Fruit	--	--		
8	GENTISIC-ACID	Hull Husk	--	--		
8	GENTISIC-ACID	Leaf	--	--		
35	GERANIOL	Leaf Essent. Oil	145200	145200	0.2933293044777782	
35	GERANIOL	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	GLUCOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	GLUTAMIC-ACID	Fruit	1380	7099	-0.47772044794013085	USDA's Ag Handbook 8 and sequelae)
3	GLYCERIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	GLYCINE	Fruit	200	1029	-0.9963335342523983	USDA's Ag Handbook 8 and sequelae)
4	GLYCOLIC-ACID	Leaf	--	--		
7	HISTIDINE	Fruit	240	1235	-0.33486171560742833	USDA's Ag Handbook 8 and sequelae)
30	HYPEROSIDE	Leaf	--	--		
8	INOSITOL	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	IRON	Fruit	1.5	154	0.08338831118036903	
6	IRON	Stem	900	900	0.1561374515042096	
4	ISOCHLOROGENIC-ACID	Fruit	--	200	-1	
3	ISOLEUCINE	Fruit	50	257	-1.0154078969360296	USDA's Ag Handbook 8 and sequelae)
22	ISOQUERCITRIN	Leaf	--	--		
75	KAEMPFEROL	Leaf	--	--		
75	KAEMPFEROL	Fruit	--	2	-0.5794291374991353	
4	KAEMPFEROL-3-O-GLUCOSIDE	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	LACTIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	LECITHIN	Seed	--	--		
2	LEUCINE	Fruit	140	720	-0.9313808451068529	USDA's Ag Handbook 8 and sequelae)
1	LEUCOCYANIDIN	Plant	--	--		
60	LIMONENE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
53	LINALOOL	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
53	LINALOOL	Leaf Essent. Oil	--	273000	1.032803610048003	
27	LINOLEIC-ACID	Fruit	1300	6687	-0.26105644413514206	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Seed	33000	110000	0.02465730498455117	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
27	LINOLEIC-ACID	Seed Oil	--	--		
11	LITHIUM	Fruit	0.088	0.308	-0.672367806726868	
21	LUPEOL	Leaf	--	--		
21	LUPEOL	Stem	--	--		
21	LUPEOL	Root	--	--		
15	LUTEIN	Fruit	0.7	7	-0.22996142536614406	
78	LUTEOLIN	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	LYCOPENE	Fruit	--	--		
4	LYSINE	Fruit	150	772	-0.8656782702911159	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Fruit	58	2310	0.08347231535472893	
65	MAGNESIUM	Stem	4360	4360	-0.17001174539444178	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
15	MALIC-ACID	Fruit	1500	2000	-0.8215787018847368	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	MALIC-ACID	Plant	--	--		
6	MALVIDIN	Fruit	--	--		
14	MANGANESE	Fruit	0.5	54	-0.047468534240292154	
14	MANGANESE	Stem	986	986	-0.3806285370071949	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	MERCURY	Fruit	--	0.011	-0.3194372671514748	
15	METHIONINE	Fruit	220	1132	0.21362860728552646	USDA's Ag Handbook 8 and sequelae)
1	METHYL-AMINE	Fruit Juice	--	--		
2	MOLYBDENUM	Fruit	0.1	0.539	-0.37721248118680145	
13	MUFA	Fruit	230	1183	-0.23678373998760255	USDA's Ag Handbook 8 and sequelae)
34	MYRICETIN	Fruit	1	9.3	0.39776676515655446	
6	MYRISTIC-ACID	Fruit	50	257	-0.25701951929746253	USDA's Ag Handbook 8 and sequelae)
2	NEO-CHLOROGENIC-ACID	Fruit	--	20		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	NEOXANTHIN	Fruit	--	--		
10	NEROL	Leaf	--	--		
39	NIACIN	Fruit	3	15.4	-0.605557161390472	USDA's Ag Handbook 8 and sequelae)
39	NIACIN	Stem	--	--		Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	NICKEL	Fruit	0.01	0.77	-0.5452883169082009	
2	NONACOSANE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
64	OLEANOLIC-ACID	Leaf Wax	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
64	OLEANOLIC-ACID	Pericarp	--	--		
1	OLEANOLIC-ACID-METHYL-ESTER	Leaf	--	--		
18	OLEIC-ACID	Plant	230	1183	-0.7096693225803793	
18	OLEIC-ACID	Seed	22200	74000	-0.3707767625520139	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
18	OLEIC-ACID	Seed Oil	--	--		
25	OPCS	Leaf	170	640		
9	OXALIC-ACID	Fruit	34	34	-0.3044741963579158	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	P-COUMARIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	P-HYDROXY-BENZOIC-ACID	Hull Husk	--	--		
13	P-HYDROXY-BENZOIC-ACID	Root	--	--		
13	P-HYDROXY-BENZOIC-ACID	Leaf	--	--		
13	PALMITIC-ACID	Fruit	1620	8333	-0.23580842316871725	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Seed	3300	11000	-0.472635357644977	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
13	PALMITIC-ACID	Seed Oil	--	--		
11	PANTOTHENIC-ACID	Fruit	0.2	1.3	-1.0718946042703752	USDA's Ag Handbook 8 and sequelae)
24	PECTIN	Fruit	300	3900	-0.5839446324584245	
24	PECTIN	Leaf	--	--		Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
7	PELARGONIDIN	Fruit	--	--		
3	PEONIDIN	Pericarp	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Tissue Culture	--	--		
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Exocarp	--	--		
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	PETUNIDIN	Pericarp	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	PETUNIDIN-3-O-BETA-D-GLUCOSIDE	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	PETUNIDIN-3-O-BETA-D-GLUCOSIDE	Exocarp	--	--		
1	PETUNIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp	--	--		
7	PHENYLALANINE	Fruit	140	720	-0.9037071292147459	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Fruit	117	1848	-0.41551440624393526	
4	PHOSPHORUS	Stem	1710	1710	-0.5945154579676041	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	PHYLLOQUINONE	Fruit	0.04	0.09	-0.21889420119445582	
2	PHYTOSTEROLS	Fruit	40	206	-0.9525233048912787	USDA's Ag Handbook 8 and sequelae)
7	PICEID	Fruit	--	--		
14	POTASSIUM	Fruit	1784	24640	0.5948517865626541	
14	POTASSIUM	Stem	20100	20100	0.5104500914352443	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	POTASSIUM-BITARTRATE	Leaf	--	--		
1	PROCYANIDIN-B-1	Leaf	--	--		
1	PROCYANIDIN-B-1	Pericarp	--	--		
1	PROCYANIDIN-B-1	Seed	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	PROCYANIDIN-B-2	Seed	--	--		
1	PROCYANIDIN-B-2	Leaf	--	--		
1	PROCYANIDIN-B-2	Pericarp	--	--		
3	PROCYANIDIN-B-2-3'-O-GALLATE	Fruit	--	--		
3	PROCYANIDIN-B-2-3'-O-GALLATE	Seed	--	--		
3	PROCYANIDIN-B-2-3,3'-DI-O-GALLATE	Seed	--	--		
2	PROCYANIDIN-B-3	Seed	--	--		
2	PROCYANIDIN-B-3	Leaf	--	--		
2	PROCYANIDIN-B-3	Pericarp	--	--		
4	PROCYANIDIN-B-4	Seed	--	--		
4	PROCYANIDIN-B-4	Leaf	--	--		
4	PROCYANIDIN-B-4	Pericarp	--	--		
1	PROCYANIDIN-B-6	Seed	--	--		
1	PROCYANIDIN-C-2	Seed	--	--		
27	PROCYANIDINS	Fruit	--	--		
1	PROTOCATECHUALDEHYDE	Leaf	--	--		
1	PROTOCATECHUALDEHYDE	Fruit	--	--		
43	PROTOCATECHUIC-ACID	Leaf	--	--		
19	PTEROSTILBENE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	PUFA	Fruit	1690	8693	-0.21721248210881625	USDA's Ag Handbook 8 and sequelae)
1	PYRROLIDINE	Fruit Juice	--	--		
176	QUERCETIN	Fruit	0.5	16	-0.7176094612628865	
176	QUERCETIN	Leaf	--	--		
6	QUERCIMERITRIN	Leaf	--	--		
44	QUERCITRIN	Leaf	--	--		
44	QUERCITRIN	Fruit	--	--		
1	QUINIC-ACID	Fruit	--	--		Jim Duke's personal files.
1	QUINIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	QUINIC-ACID	Root	--	--		
1	RAFFINOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
68	RESVERATROL	Leaf	375	90400		
68	RESVERATROL	Shoot	--	--		
68	RESVERATROL	Fruit	--	13.3		
68	RESVERATROL	Fruit Juice	0.06	3.3		Creasy, L. L., Creasy, M. T. 1998. Grape Chemistry and the Significance of Resveratrol: An Overview. Pharm. Biol., 36: 8-13.
15	RIBOFLAVIN	Plant	0.5	3.2	-0.5722447215531815	



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	RIBOFLAVIN	Stem	6.9	6.9	-0.48723714845751276	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
87	RUTIN	Leaf	--	--		
7	SALICYLATES	Fruit	2	80	-0.1073449080720807	
34	SALICYLIC-ACID	Root	--	--		
34	SALICYLIC-ACID	Leaf	--	--		
60	SELENIUM	Fruit	--	0.012	-0.3832115202693911	
60	SELENIUM	Stem	--	18	1.924519185907645	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	SERINE	Fruit	320	1646	-0.7050443362120865	USDA's Ag Handbook 8 and sequelae)
14	SHIKIMIC-ACID	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SHIKIMIC-ACID	Root	--	--		
4	SILICON	Fruit	1	28	-0.5174716882721563	ACTA AGRIC SCAND SUPPL 22: 1980
4	SILICON	Stem	365	365	-0.5461064151412073	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	SILVER	Fruit	0.022	0.077	-0.5251184109620559	
9	SINAPIC-ACID	Root	--	--		
1	SODIUM	Fruit	2	454	-0.1408984763342879	
1	SODIUM	Stem	156	156	-0.5194124752401025	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	SQUALENE	Seed	--	--		
10	SQUALENE	Seed Oil	--	--		
1	STACHYOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Seed	1440	4800	-0.4612463396361093	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Seed Oil	--	--		
12	STIGMASTEROL	Plant	--	--		
12	STIGMASTEROL	Root	--	--		
12	STIGMASTEROL	Seed	--	--		
7	SUCCINIC-ACID	Fruit	--	--		
14	SULFUR	Fruit	7	888	-0.3664842839566224	
4	SYRINGALDEHYDE	Leaf	--	--		
6	SYRINGIC-ACID	Hull Husk	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	SYRINGIC-ACID	Leaf	--	--		
35	TANNIN	Seed	--	--		
2	TARAXASTEROL	Leaf	--	--		
2	TARAXASTEROL	Stem	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	TARAXEROL	Leaf	--	--		
2	TARAXEROL	Stem	--	--		
6	TARTARIC-ACID	Fruit	15	20	-0.657218517797534	
6	TARTARIC-ACID	Leaf	--	--		
31	THIAMIN	Fruit	0.8	4.9	-0.05538912844659949	USDA's Ag Handbook 8 and sequelae)
31	THIAMIN	Stem	11	11	0.36791183185934545	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	THREONINE	Fruit	180	926	-0.8695024361765752	USDA's Ag Handbook 8 and sequelae)
4	TIN	Stem	12	12	0.7071067811865475	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	TRANS-RESVERATROL	Fruit	--	--		
1	TRIACONTAN-1-OL	Root	--	--		
29	TRYPTOPHAN	Fruit	30	154	-0.9774261540468739	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Fruit	120	617	-0.7465880361585973	USDA's Ag Handbook 8 and sequelae)
89	URSOLIC-ACID	Fruit	--	--		
3	VALINE	Fruit	180	926	-0.7277174826511351	USDA's Ag Handbook 8 and sequelae)
24	VANILLIC-ACID	Hull Husk	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	VANILLIC-ACID	Leaf	--	--		
28	VANILLIN	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	VIOLAXANTHIN	Fruit	--	--		
3	XYLOSE	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ZEATIN	Resin, Exudate, Sap	--	--		
5	ZEAXANTHIN	Fruit	--	--		
77	ZINC	Fruit	0.4	27	-0.09932995693106657	
77	ZINC	Stem	75	75	-0.6142974269256724	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.