

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Vitis vinifera*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CARBOHYDRATES	Fruit	177700.0	914095.0	0.7016650651905534	USDA's Ag Handbook 8 and sequelae)
0	WATER	Fruit	761000.0	897000.0	0.5497045312138683	--
0	WATER	Stem		792000.0	0.21078766023930146	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
53	LINALOOL	Leaf Essent. Oil		273000.0	1.032803610048003	--
0	LINALOL	Leaf Essent. Oil		273000.0	1.0	--
0	FAT	Seed	60000.0	200000.0	-0.34441983215421706	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	SUGAR	Fruit	30000.0	189000.0	0.005740941518907065	--
35	GERANIOL	Leaf Essent. Oil		145200.0	0.2933293044777782	--
0	ELEMOL-ACETATE	Leaf Essent. Oil		130200.0		--
27	LINOLEIC-ACID	Seed	33000.0	110000.0	0.02465730498455117	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
23	ALPHA-TERPINEOL	Leaf Essent. Oil		108000.0	1.3174552815097405	--
0	PROTEIN	Seed	70000.0	100000.0	-1.190185310672251	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
68	RESVERATROL	Leaf	375.0	90400.0		--
0	PROTEIN	Stem		89000.0	-0.7071067811865476	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ASH	Stem		88000.0	0.9172643481683129	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ASH	Fruit	4290.0	77000.0	0.526613994855476	--
18	OLEIC-ACID	Seed	22200.0	74000.0	-0.3707767625520139	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CALCIUM-PECTATE	Leaf		69000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	FLAVONOIDS	Leaf	40000.0	50000.0	1.097856271722259	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PROTEIN	Fruit	6350.0	35236.0	-0.9955216411354211	USDA's Ag Handbook 8 and sequelae)
0	FAT	Fruit	5010.0	33898.0	-0.3823418924511751	USDA's Ag Handbook 8 and sequelae)
4	EPSILON-VINIFERIN	Leaf		30900.0		--
15	FIBER	Fruit	4210.0	24640.0	-1.104411552185134	USDA's Ag Handbook 8 and sequelae)
14	POTASSIUM	Fruit	1784.0	24640.0	0.5948517865626541	--
0	ALPHA-VINIFERIN	Leaf		23400.0		--
14	POTASSIUM	Stem		20100.0	0.5104500914352443	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
28	CALCIUM	Stem		17700.0	-0.11330590567075993	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
13	PALMITIC-ACID	Seed	3300.0	11000.0	-0.472635357644977	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	SFA	Fruit	1890.0	9722.0	-0.16575412818647417	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Fruit	1690.0	8693.0	-0.21721248210881625	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Fruit	1620.0	8333.0	-0.23580842316871725	USDA's Ag Handbook 8 and sequelae)
0	NITROGEN	Fruit	1100.0	7220.0	-0.519032430701182	ACTA AGRIC SCAND SUPPL 22: 1980
8	GLUTAMIC-ACID	Fruit	1380.0	7099.0	-0.47772044794013085	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Fruit	1300.0	6687.0	-0.26105644413514206	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Seed	1440.0	4800.0	-0.4612463396361093	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
28	CALCIUM	Fruit	92.0	4774.0	0.2117719310786729	--
65	MAGNESIUM	Stem		4360.0	-0.17001174539444178	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	ASPARTIC-ACID	Fruit	810.0	4167.0	-0.78714800256649	USDA's Ag Handbook 8 and sequelae)
24	PECTIN	Fruit	300.0	3900.0	-0.5839446324584245	--
112	ASCORBIC-ACID	Leaf	3490.0	3870.0	-0.08483341087930922	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ANTHOCYANINS	Leaf		3000.0		Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
14	ARGININE	Fruit	490.0	2520.0	-0.47739653189299114	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Fruit	58.0	2310.0	0.08347231535472893	--
15	ALPHA-LINOLENIC-ACID	Fruit	390.0	2006.0	-0.24402755757732797	USDA's Ag Handbook 8 and sequelae)
15	MALIC-ACID	Fruit	1500.0	2000.0	-0.8215787018847368	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	ACETIC-ACID	Fruit	1500.0	2000.0	-0.06645757225743394	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	PHOSPHORUS	Fruit	117.0	1848.0	-0.41551440624393526	--
4	PHOSPHORUS	Stem		1710.0	-0.5945154579676041	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	SERINE	Fruit	320.0	1646.0	-0.7050443362120865	USDA's Ag Handbook 8 and sequelae)
3	ALANINE	Fruit	280.0	1440.0	-0.8911912580591054	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
77	CHLOROGENIC-ACID	Fruit		1400.0	0.11655949578196001	--
7	HISTIDINE	Fruit	240.0	1235.0	-0.33486171560742833	USDA's Ag Handbook 8 and sequelae)
13	MUFA	Fruit	230.0	1183.0	-0.23678373998760255	USDA's Ag Handbook 8 and sequelae)
18	OLEIC-ACID	Plant	230.0	1183.0	-0.7096693225803793	--
0	PROLINE	Fruit	220.0	1132.0	-0.7893812127923229	USDA's Ag Handbook 8 and sequelae)
15	METHIONINE	Fruit	220.0	1132.0	0.21362860728552646	USDA's Ag Handbook 8 and sequelae)
5	ALUMINUM	Stem		1030.0	0.044464754302322065	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
12	GLYCINE	Fruit	200.0	1029.0	-0.9963335342523983	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Stem		986.0	-0.3806285370071949	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	THREONINE	Fruit	180.0	926.0	-0.8695024361765752	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Fruit	180.0	926.0	-0.7277174826511351	USDA's Ag Handbook 8 and sequelae)
6	IRON	Stem		900.0	0.1561374515042096	--
14	SULFUR	Fruit	7.0	888.0	-0.3664842839566224	--
4	LYSINE	Fruit	150.0	772.0	-0.8656782702911159	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Fruit	140.0	720.0	-0.9313808451068529	USDA's Ag Handbook 8 and sequelae)
7	PHENYLALANINE	Fruit	140.0	720.0	-0.9037071292147459	USDA's Ag Handbook 8 and sequelae)
25	OPCS	Leaf	170.0	640.0		--
8	TYROSINE	Fruit	120.0	617.0	-0.7465880361585973	USDA's Ag Handbook 8 and sequelae)
112	ASCORBIC-ACID	Fruit	99.0	600.0	-0.24718280983607235	USDA's Ag Handbook 8 and sequelae)
2	CYSTINE	Fruit	110.0	566.0	-0.4853602292193013	USDA's Ag Handbook 8 and sequelae)
0	BREVILAGIN-I	Leaf		533.3		--
1	SODIUM	Fruit	2.0	454.0	-0.1408984763342879	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	SILICON	Stem		365.0	-0.5461064151412073	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PROANTHOCYANIDIN-B1	Leaf	88.0	333.0		--
112	ASCORBIC-ACID	Stem		310.0	-1.1858763373403332	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
6	MYRISTIC-ACID	Fruit	50.0	257.0	-0.25701951929746253	USDA's Ag Handbook 8 and sequelae)
3	ISOLEUCINE	Fruit	50.0	257.0	-1.0154078969360296	USDA's Ag Handbook 8 and sequelae)
2	PHYTOSTEROLS	Fruit	40.0	206.0	-0.9525233048912787	USDA's Ag Handbook 8 and sequelae)
4	ISOCHLOROGENIC-ACID	Fruit		200.0	-1.0	--
0	ISOVITILAGIN	Leaf		163.0		--
1	SODIUM	Stem		156.0	-0.5194124752401025	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
29	TRYPTOPHAN	Fruit	30.0	154.0	-0.9774261540468739	USDA's Ag Handbook 8 and sequelae)
6	IRON	Fruit	1.5	154.0	0.08338831118036903	--
5	ALUMINUM	Fruit	1.0	154.0	-0.1787194752035278	--
47	BETA-SITOSTEROL	Fruit	30.0	150.0	-0.5971588891273873	--
0	PROANTHOCYANIDIN-B2	Leaf	17.0	94.0		--
0	VITILAGIN	Leaf		89.0		--
7	SALICYLATES	Fruit	2.0	80.0	-0.1073449080720807	--
77	ZINC	Stem		75.0	-0.6142974269256724	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
14	MANGANESE	Fruit	0.5	54.0	-0.047468534240292154	--
4	BORON	Fruit	1.0	50.0	0.20278384568897864	--
53	BETA-CAROTENE	Stem		43.0	-0.5551411085990826	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	STRONTIUM	Fruit	1.54	38.5	-0.4672073193158673	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROANTHOCYANIDIN-B4	Leaf	7.0	37.0		--
0	PROANTHOCYANIDIN-B3	Leaf	7.0	37.0		--
9	OXALIC-ACID	Fruit		34.0	-0.3044741963579158	--
2	COBALT	Stem		33.0	0.7427055671504605	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
32	ALPHA-TOCOPHEROL	Fruit	6.0	31.0	-0.6444565233542005	--
4	SILICON	Fruit	1.0	28.0	-0.5174716882721563	ACTA AGRIC SCAND SUPPL 22: 1980
77	ZINC	Fruit	0.4	27.0	-0.09932995693106657	--
0	PROANTHOCYANIDIN-B2-3'-O-GALLATE	Leaf	3.0	25.0		--
0	TARTARIC-ACID-CAFFEYOYL-ESTER	Fruit	15.0	20.0		--
6	TARTARIC-ACID	Fruit	15.0	20.0	-0.657218517797534	--
2	NEO-CHLOROGENIC-ACID	Fruit		20.0		--
60	SELENIUM	Stem		18.0	1.924519185907645	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
176	QUERCETIN	Fruit	0.5	16.0	-0.7176094612628865	--
0	BARIUM	Fruit	0.66	15.4	-0.5127937102474286	--
39	NIACIN	Fruit	3.0	15.4	-0.605557161390472	USDA's Ag Handbook 8 and sequelae)
68	RESVERATROL	Fruit		13.3		--
4	TIN	Stem		12.0	0.7071067811865475	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
12	COPPER	Fruit	0.7	11.6	-0.09487047254583593	--
31	THIAMIN	Stem		11.0	0.36791183185934545	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
34	MYRICETIN	Fruit	1.0	9.3	0.39776676515655446	--
24	CHROMIUM	Stem		9.0	0.4664861453042604	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LEAD	Fruit	0.02	9.0	0.04188042425593692	--
0	TITANIUM	Fruit	0.11	7.7	-0.5795941269861224	--
15	LUTEIN	Fruit	0.7	7.0	-0.22996142536614406	--
15	RIBOFLAVIN	Stem		6.9	-0.48723714845751276	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PROANTHOCYANIDIN-B1-3-O-GALLATE	Leaf	0.0	6.0		--
0	VITAMIN-B-6	Fruit	1.0	6.0		USDA's Ag Handbook 8 and sequelae)
0	VIT-B-6	Fruit	1.0	6.0	-0.3708031557292606	--
0	RUBIDIUM	Fruit	0.4	5.5	-1.0186549557194133	ACTA AGRIC SCAND SUPPL 22: 1980
31	THIAMIN	Fruit	0.8	4.9	-0.05538912844659949	USDA's Ag Handbook 8 and sequelae)
0	PROANTHOCYANIDIN-B2-3,3'-O-GALLATE	Leaf	0.0	4.0		--
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	--
53	BETA-CAROTENE	Fruit	0.5	2.1	-0.14674136696680995	--
75	KAEMPFEROL	Fruit		2.0	-0.5794291374991353	--
0	ZIRCONIUM	Fruit	0.44	1.54	-0.41983235298720856	--
11	PANTOTHENIC-ACID	Fruit	0.2	1.3	-1.0718946042703752	USDA's Ag Handbook 8 and sequelae)
0	BROMINE	Fruit		1.0	-0.42563543443835	USDA's Ag Handbook 8 and sequelae)
2	ARSENIC	Fruit	0.001	0.889	0.6023550350459049	--
3	NICKEL	Fruit	0.01	0.77	-0.5452883169082009	--
0	FLUORINE	Fruit	0.1	0.6	-0.744462097809404	ACTA AGRIC SCAND SUPPL 22: 1980
2	MOLYBDENUM	Fruit	0.1	0.539	-0.37721248118680145	--
24	CHROMIUM	Fruit	0.005	0.385	-0.45355683651553846	--
11	LITHIUM	Fruit	0.088	0.308	-0.672367806726868	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CADMIUM	Fruit	0.001	0.231	0.03526712239341311	--
15	FOLACIN	Fruit	0.03	0.23	-0.7424982313124213	USDA's Ag Handbook 8 and sequelae)
2	COBALT	Fruit	0.005	0.22	-0.5084821806978201	--
5	PHYLLOQUINONE	Fruit	0.04	0.09	-0.21889420119445582	--
0	DAMASCENONE	Fruit Juice	0.013	0.085		--
3	SILVER	Fruit	0.022	0.077	-0.5251184109620559	--
60	SELENIUM	Fruit	0.0	0.012	-0.3832115202693911	--
1	MERCURY	Fruit	0.0	0.011	-0.3194372671514748	--
51	ELLAGIC-ACID	Fruit				--
1	PROCYANIDIN-B-6	Seed				--
5	ZEAXANTHIN	Fruit				--
0	MEGASTIGM-5-EN-7-YNE-3,9-DIOL	Fruit Juice				--
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Exocarp				--
0	LEUCOANTHOCYANIDOLE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	OENIN	Pericarp				Chemical Constituents of Oriental Herbs (3 diff. books)
0	BETA-PHENYLETHANOL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	EPI-CATECHIN-(4-BETA-8)-EPI-CATECHIN-(4-BETA-6)-EPI-CATECHIN	Seed				--
0	LINALOOL-6-O-ALPHA-L-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit Juice				--
0	PETUNIDIN-3,5-DIGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
38	(-)-EPICATECHIN	Pericarp				--
0	NEROL-BETA-D-GLUCOSIDE	Fruit Juice				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	3-OXO-OLEAN-12-EN-28-OIC-ACID	Pericarp				--
0	ISOBUTYL-AMINE	Fruit Juice				--
0	BENZYL-6-O-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
77	CHLOROGENIC-ACID	Root				--
0	PROTOPECTINASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ABSCISSIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PAEONIDIN-3-(6-P-COUMAROYLGLUCOSIDE)	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	GAMMA-CAROTENE	Fruit				--
2	TARAXEROL	Stem				--
9	DELPHINIDIN	Plant				--
0	PROCYANIDIN-B-2-3'-GALLATE	Leaf				--
0	URSOLIC-ALDEHYDE	Stem				--
0	CAFFEOYL-TARTRATE	Fruit				Jim Duke's personal files.
0	STEARIC-ACID-BUTYL-ESTER	Seed				--
14	SHIKIMIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	4-HYDROXYBENZALDEHYDE	Leaf				--
0	PHYTOFLUENE	Fruit				--
0	24-METHYL-CYCLOARTENOL	Stem				--
14	SHIKIMIC-ACID	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
1	PROTOCATECHUALDEHYDE	Leaf				--
60	LIMONENE	Plant				Stitt, Paul. Why George should eat broccoli.
57	COUMARIN	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
40	EPICATECHIN	Seed				--
0	GALLOYL-PROCYANIDIN	Leaf				--
0	GRASSHOPPER-KETONE	Fruit Juice				--
3	GLYCERIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PROCYANIDIN-B-5	Seed				--
3	XYLOSE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	STIGMASTEROL	Plant				--
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Tissue Culture				--
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.)
0	BETA-PHENYLETHANOL-6-BETA-D-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit Juice				--
0	EPI-CATECHIN-(4-BETA-8)-EPI-CATECHIN-(4-BETA-6)-CATECHIN	Seed				--
0	ALPHA-HYDROXY-CAROTENE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOOL-6-O-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	PEROXIDASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
38	(-)-EPICATECHIN	Fruit				--
0	NEROL-6-O-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	3-BETA-HYDROXY-OLEAN-12-EN-28-ALDEHYDE	Pericarp				--
0	ISOAMYL-AMINE	Fruit Juice				--
20	BENZOIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
77	CHLOROGENIC-ACID	Leaf				--
0	A-HEMICELLULOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	CAFTARIC-ACID	Fruit				--
0	PAEONIDIN	Fruit				--
62	GALLIC-ACID	Fruit				--
6	SYRINGIC-ACID	Leaf				--
1	PROCYANIDIN-B-2	Pericarp				--
102	CAFFEIC-ACID	Fruit				--
0	QUERCETIN-3-O-GLUCOSIDE	Plant				--
0	PHYTOENE	Fruit				--
0	2-PHENYLETHYL-AMINE	Fruit Juice				--
0	QUERCETIN-3-GLUCURONIDE	Leaf				--
0	OENIN	Petiole				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	NUCLEOTIDE-PYROPHOSPHATASE	Root				--
8	INOSITOL	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MONOFERULYLSUCCINIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	2-TRANS-HEPTANAL	Seed				--
1	RAFFINOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	FERTARIC-ACID	Fruit				--
8	GENTISIC-ACID	Leaf				--
0	NEROL-6-O-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
2	DIMETHYL-AMINE	Fruit Juice				--
0	PROCYANIDIN-B-4-3'-GALLATE	Seed				--
1	CHOLESTEROL	Fruit				--
28	VANILLIN	Fruit				--
13	PALMITIC-ACID	Seed Oil				--
13	BETA-IONONE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	EPI-CATECHIN-(4-BETA-6)-EPI-CATECHIN-(4-BETA-8)-EPI-CATECHIN	Seed				--
1	QUINIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	ALPHA-CAROTENE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2,6-DIMETHYL-TRANS-OCTA-2,7-DIEN-1,6-DIOL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
7	PELARGONIDIN	Fruit				--
0	JASMONIC-ACID	Bud				--
0	NEROL-6-O-ALPHA-L-RHAMNOPYRANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	3-BETA-29-DIHYDROXY-OLEAN-12-EN-28-OIC-ACID	Pericarp				--
0	N(6)-ISO-PENTENYL-ADENINE	Resin, Exudate, Sap				--
0	9-HYDROXY-MEGASTIGM-4,6,7-TRIEN-3-ONE	Fruit Juice				--
1	ASTILBIN	Pericarp				--
13	P-HYDROXY-BENZOIC-ACID	Hull Husk				--
0	GALACTURONIC-ACID	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	SYRINGALDEHYDE	Leaf				--
4	D-CATECHIN	Leaf				--
1	PROCYANIDIN-B-2	Leaf				--
0	PHENYLPROPANOIC-ACIDS	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
0	2-PHENYLETHAN-2-OL-6-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit				--
1	PROCYANIDIN-B-1	Seed				--
0	OCTAN-1-OL	Stem				--
61	FERULIC-ACID	Fruit				--
1	DIHYDROZEATIN	Resin, Exudate, Sap				--
0	GALLOCATECHIN	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	TARAXEROL	Leaf				--
0	MONOCAFFEIC-ACID	Leaf				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.
0	ENGELETIN	Pericarp				--
62	GALLIC-ACID	Leaf				--
0	GLUCOSE-6-PHOSPHATE-DEHYDROGENASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
77	CHLOROGENIC-ACID	Shoot				--
1	STACHYOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MALVIDIN-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.
89	URSOLIC-ACID	Fruit				--
18	OLEIC-ACID	Seed Oil				--
8	LACTIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	EPI-CATECHIN-(4-BETA-6)-EPI-CATECHIN-(4-BETA-8)-CATECHIN	Seed				--
1	QUINIC-ACID	Fruit				Jim Duke's personal files.
10	ALPHA-AMYRIN	Stem				--
1	DELPHINIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PECTIN-METHYL-ESTERASE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	GALLOCATECHIN	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	NEROL-6-O-ALPHA-L-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	DIHYDROPHASEIC-ACID-4'-BETA-D-GLUCOSIDE	Fruit				--
4	PROCYANIDIN-B-4	Pericarp				--
0	PHOSPHATIDYL-SERINE	Seed				--
0	16-BETA-HYDROXY-3-OXO-OLEAN-12-EN-28-OIC-ACID	Pericarp				--
0	B-HEMICELLULOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	TRANS-CAFTARIC-ACID	Fruit Juice				--
0	30-NOR-LUPAN-3-BETA-OL-20-ONE	Root				--
30	ANTHOCYANINS	Pericarp				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	P-COUMAROYL-TRANS-TARTRATE	Fruit				--
1	GALACTOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Seed Oil				--
4	D-CATECHIN	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	PROCYANIDIN-B-2	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRIACONTAN-1-OL-TRIDECANOATE	Root				--
24	PECTIN	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
0	2-PHENYLETHAN-1-OL	Leaf				--
7	PICEID	Fruit				--
0	OBTUSIFOLIOL	Stem				--
3	CIS-RESVERATROL	Fruit				--
0	GALLOCATECHIN	Hr				--
2	TARAXASTEROL	Leaf				--
0	MONOCAFFEIC-ACID	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	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LINALOL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	DIHYDROQUERCETIN-3-RHAMNOSIDE	Pericarp				--
62	GALLIC-ACID	Seed				--
7	GLUCOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ANTHOCYANINS	Fruit				--
0	VOMIFOLIOL	Fruit				--
0	CATECHOL-OXIDASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
10	SQUALENE	Seed				--
0	MALVIDIN-3-GLUCOSIDE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
64	OLEANOLIC-ACID	Pericarp				--
0	KAEMPFEROL-3-MONOGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
30	(+)-CATECHIN	Pericarp				--
44	QUERCITRIN	Leaf				--
0	ALPHA-AMYL-AMINE	Fruit Juice				--
3	CAFFEYOILTARTARIC-ACID	Fruit				Jim Duke's personal files.
0	ZEATIN-RIBOSIDE	Resin, Exudate, Sap				--
10	NEROL	Leaf				--
0	DIHYDROFURAN-I	Fruit Juice				--
4	PROCYANIDIN-B-4	Leaf				--
0	16-BETA-HYDROXY-3-OXO-OLEAN-1-12-DIEN-28-OIC-ACID	Pericarp				--
0	HYDROXY-CITRONELLOL	Essential Oil				--
0	ASRAGALIN	Flower				--
13	P-HYDROXY-BENZOIC-ACID	Leaf				--
0	3-HYDROXY-BETA-DAMASCONE	Fruit Juice				--
0	PROCYANIDIN-B1,3'-O-GALLATE	Seed				--
0	P-COUMAROYL-CIS-TARTRATE	Fruit				--
22	GABA	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	SQUALENE	Seed Oil				--
1	PROCYANIDIN-B-1	Pericarp				--
1	TRIACONTAN-1-OL	Root				--
0	PALMITIC-ACID-BUTYL-ESTER	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	LYCOPENE	Fruit				--
0	PHOSPHATIDYL-INOSITOL	Seed				--
0	2-METHOXY-3-ISOBUTYL-PYRAZINE	Stem				--
0	PEONIDIN-3-P-COUMAROYL-GLUCOSIDE	Tissue Culture				--
0	O-HYDROXYBENZOIC-ACID	Hull Husk				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PROCYANIDIN-G	Pericarp				--
0	EPICATECHIN-3-GALLATE	Seed				--
1	CITROSTADIENOL	Stem				--
35	TANNIN	Seed				--
0	MONO-P-COUMARYL-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
43	CATECHIN	Seed				--
0	LINALOL-6-0-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	DIHYDROKAEMPFEROL-3-RHAMNOSIDE	Pericarp				--
62	GALLIC-ACID	Root				--
0	GERMANICOL	Stem				--
1	ANTHERAXANTHIN	Fruit				--
0	2,2,6-TRIMETHYL-8-(1-HYDROXY-ETHYL)-7-OXA-BICYCLO-(4,3,0)-NONA-4,9-DIENE	Fruit				--
0	PHOSPHODIESTERASE	Root				--
0	VITISPIRANE	Plant				Chemical Constituents of Oriental Herbs (3 diff. books)
1	CATALASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MALVIDIN-3-CHLOROGENIC-ACID-GLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	PROTOCATECHUALDEHYDE	Fruit				--
0	CIS-PICEID	Fruit				--
75	KAEMPFEROL	Leaf				--
9	BETA-AMYRIN	Stem				--
30	(+)-CATECHIN	Leaf				--
0	QUERCETIN-GLUCURONOSIDE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ALPHA-3-OXO-IONONE	Fruit Juice				--
44	QUERCITRIN	Fruit				--
2	ZEATIN	Resin, Exudate, Sap				--
2	NEOXANTHIN	Fruit				--
2	DIETHYL-AMINE	Fruit Juice				--
4	PROCYANIDIN-B-4	Seed				--
21	LUPEOL	Root				--
13	P-HYDROXY-BENZOIC-ACID	Root				--
27	PROCYANIDINS	Fruit				--
0	3,7-DIMETHYL-OCTA-1,7-DIEN-3,6-DIOL	Fruit				--
1	EPICATECHIN-3-O-GALLATE	Seed				--
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.
7	FUMARIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
34	SALICYLIC-ACID	Leaf				--
1	POTASSIUM-BITARTRATE	Leaf				--
7	CYCLOARTENOL	Stem				--
1	PROCYANIDIN-B-1	Leaf				--
0	TRANS-CAFFEIC-ACID	Fruit				Jim Duke's personal files.
47	BETA-SITOSTEROL	Seed				--
34	SALICYLIC-ACID	Root				--
0	LUTEOXANTHIN	Fruit				--
3	PETUNIDIN	Pericarp				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	(-)-GALLOCATECHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	NONACOSANE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ETHYL-AMINE	Fruit Juice				--
1	PROCYANIDIN-C-2	Seed				--
0	EPICATECHIN-3-GALLATE	Fruit				--
15	CITRONELLOL	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.
0	MONO-P-COUMARYL-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	CAMPESTEROL	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOL-6-O-ALPHA-L-RHAMNOPYRANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	DEHYDROVOMIFOLIOL	Fruit				--
4	BIOTIN	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ENOMELANIN	Plant				--
0	GERANIOL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	2-PHENYLETHAN-2-OL-6-BETA-D-APIOFURANOSYL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	2,6-DIMETHYL-TRANS-OCTA-2,7-DIEN-1,6-DIOL-BETA-D-GLUCOPYRANOSIDE	Plant				--
0	MALVIDIN-3-CAFFEYOYLGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MYRICETIN-3-O-BETA-D-GLUCOSIDE	Leaf				--
0	JU	Plant				--
0	BETA-3-OXO-DAMASCONE	Fruit Juice				--
30	(+)-CATECHIN	Seed				--
0	ALPHA-3-OXO-DAMASCONE	Fruit Juice				--
0	GERANIOL-6-O-ALPHA-L-RHAMNOPYRANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	VITIS-ARABINO GALACTAN-PROTEIN-AG-P	Fruit				--
0	DELPHINIDIN-3-CAFFEYOYLGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	PROCYANIDIN-B-3	Pericarp				--
21	LUPEOL	Stem				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HIRSUTRIN	Leaf				--
1	METHYL-AMINE	Fruit Juice				--
3	PROCYANIDIN-B-2-3'-O-GALLATE	Fruit				--
0	3,7-DIMETHYL-OCTA-1,6-DIEN-3,5-DIOL	Fruit				--
1	EPICATECHIN-3-O-GALLATE	Fruit				--
8	FRUCTOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
68	RESVERATROL	Shoot				--
0	PAEONIDIN-3-O-GLUCOSIDE	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
0	CYANIDIN-3-GLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PROANTHOCYANIDIN-POLYMER	Fruit				--
0	MONOCAFFEYOYL TARTARIC ACID	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
87	RUTIN	Leaf				--
78	LUTEOLIN	Leaf				--
3	PEONIDIN	Pericarp				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
21	(-)-EPIGALLOCATECHIN	Leaf				--
5	ERGOSTEROL	Fruit				--
0	PROCYANIDIN-C-1	Leaf				--
40	EPICATECHIN	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LINALOL-6-O-ALPHA-L-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
5	CONIFERYL-ALDEHYDE	Fruit				--
22	BETULINIC-ACID	Root				--
0	3-OXO-BETA-DAMASCONE	Fruit Juice				--
0	NEROL-6-O-ALPHA-L-RHAMNOPYRANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit Juice				--
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.
0	2,6-DIMETHYL-TRANS-OCTA-2,7-DIEN-1,6-DIOL-6-O-ALPHA-D-ARABINOFURANOSYL-BETA-D-BETA-D-GLUCOPYRANOSIDE	Fruit				--
9	SINAPIC-ACID	Root				--
0	MALVIDIN-3-(P-COUMAROYLGLUCOSIDE)	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MALVIDIN-MONOGLUCOSIDE	Tissue Culture				--
0	BENZYL-ALCOHOL-BETA-D-RUTINOSIDE	Leaf				--
0	TRANS-COUTARIC-ACID	Fruit Juice				--
1	PYRROLIDINE	Fruit Juice				--
0	GERANIOL-6-O-ALPHA-L-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	VANILLIC-ALDEHYDE	Leaf				--
0	N-PROPYL-AMINE	Fruit Juice				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DELPHINIDIN-3-0-BETA-D-GLUCOSIDE	Fruit				--
2	PROCYANIDIN-B-3	Leaf				--
0	HEXOKINASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CIS-CAFTARIC-ACID	Fruit Juice				--
0	3,7-DIMETHYL-OCTA-1,5-DIEN-3,7-DIOL	Fruit				--
9	BETA-AMYRIN	Leaf				--
0	FR	Plant				--
1	QUINIC-ACID	Root				--
0	NONANAL	Seed				--
0	CYANIDIN-3-GALACTOSIDE	Fruit				--
0	POPULNIN	Leaf				--
0	LINOLEIC-ACID-ETHYL-ESTER	Seed				--
0	LUTEIN-5-8-EPOXIDE	Fruit				--
0	LINOLENIC-ACID	Seed Oil				--
0	(-)-EPICATECHIN-3-GALLATE	Leaf				--
0	PROCYANIDIN-C-1	Seed				--
23	CITRIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	ANTHOCYANIDINS	Pericarp				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	LINALOL	Fruit				--
60	CINNAMALDEHYDE	Fruit				--
14	BETAINE	Fruit Juice				--
7	(+)-GALLOCATECHIN	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	NEROL-6-O-ALPHA-L-ARABINOFURANOSYL-BETA-D-GLUCOPYRANOSIDE	Fruit Juice				--
0	PETUNIDIN-3-GLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	2,6-DIMETHYL-TRANS,TRANS-OCTA-2,6-DIEN-1,8-DIOL	Fruit				--
0	MALVIDIN-3-(6-P-COUMAROYLGLUCOSIDE)-5-GLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MALVIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp				--
22	ISOQUERCITRIN	Leaf				--
0	BENZYL-ALCOHOL-BETA-D-GLUCOSIDE	Leaf				--
5	CYANIN	Tissue Culture				--
0	PYROPHOSPHATASE-NUCLOETIDE	Root				--
0	ACUMINOSIDE	Fruit Juice				--
0	PAEONIDIN-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.
35	GERANIOL	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
24	VANILLIC-ACID	Leaf				--
0	DELPHINIDIN-3-(P-COUMAROYLGLUCOSIDE)-5-GLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	PROCYANIDIN-B-3	Seed				--
2	VIOLAXANTHIN	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ASCORBIC-ACID-OXIDASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
102	CAFFEIC-ACID	Root				--
0	3,7-DIMETHYL-OCTA-1,5,7-TRIEN-3-OL	Fruit				--
0	TRANS-PICEID	Fruit				--
13	FORMIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	QUERCIMERITRIN	Leaf				--
4	KAEMPFEROL-3-O-GLUCOSIDE	Plant				--
7	CYANIDIN	Fruit				--
1	PETUNIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp				--
4	GLYCOLIC-ACID	Leaf				--
0	ROSEOSIDE	Fruit				--
0	LUTEIN-5,6-EPOXIDE	Fruit				--
27	LINOLEIC-ACID	Seed Oil				--
0	HEPTACOSAN-1-OL	Root				--
39	NIACIN	Stem				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ENOTANNIN	Seed				--
0	PROCYANIDIN-B-8	Seed				--
0	CIS-CAFFEIC-ACID	Fruit				Jim Duke's personal files.
7	SUCCINIC-ACID	Fruit				--
0	2-TRANS-DECENAL	Seed				--
1	PETUNIDIN-3-O-BETA-D-GLUCOSIDE	Exocarp				--
1	CEPHALIN	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EPI-CATECHIN-(4-BETA-8)- EPI-CATECHIN-3-O- GALLATE-(4-BETA-8)- CATECHIN	Seed				--
0	LINALOOL-6-O-ALPHA-L- RHAMNOPYRANOSYL- BETA-D- GLUCOPYRANOSIDE	Fruit Juice				--
0	PETUNIDIN-3- CAFFEYOYLGLUCOSIDE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	2,2,6-TRIMETHYL-8-(1- HYDRFOXY-ETHYL)-7-OXA- BICYCLO-(4,3,0)-NONA-4,9- DIENE	Fruit				--
38	(-)-EPICATECHIN	Seed				--
6	MALVIDIN	Fruit				--
0	MALVIDIN-3-O-BETA-D- GLUCOSIDE	Exocarp				--
0	BENZYL-ALCOHOL-6-O-L- ARABINOFURANOSYL- BETA-D- GLUCOPYRANOSIDE	Leaf				--
7	CYANIDIN	Pericarp				--
16	ACETIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PAEONIDIN-3- CAFFEYOYLGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	TRANS-RESVERATROL	Fruit				--
0	MYRICETIN-3- MONOGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DELPHINIDIN-3-(6-P- COUMAROYLGLUCOSIDE)	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	PROCYANIDIN-B-2-3,3'-DI-O-GALLATE	Seed				--
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.
102	CAFFEIC-ACID	Leaf				--
0	POLYPHENOL-OXIDASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	3,7-DIMETHYL-OCT-1-ENE-3,7-DIOL	Fruit				--
2	TARAXASTEROL	Stem				--
0	OLEANOLIC-ALDEHYDE	Stem				--
176	QUERCETIN	Leaf				--
0	FERULOYL-SUCCINIC-ACID	Plant				--
2	CRYPTOXANTHIN	Fruit				--
0	FLAVONOL-GLUCOSIDES	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
53	LINALOOL	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	HENTRIACONTANE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ENOMELANIN	Fruit				--
0	PROCYANIDIN-B-7	Seed				--
18	CINNAMIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SUCCINDEHYDROGENASE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MELIBIOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	2-TRANS-4-CIS-DECADIENAL	Seed				--
1	PEONIDIN-3-O-BETA-D-GLUCOSIDE	Pericarp				--
1	LEUCOCYANIDIN	Plant				--
0	3-OXO-ALPHA-IONOL	Fruit				--
0	BETA-PHENYLETHANOL-BETA-D-RUTINOSIDE	Fruit Juice				--
0	EPI-CATECHIN-(4-BETA-8)-EPI-CATECHIN-(4-BETA-8)-CATECHIN	Seed				--
0	LINALOOL-BETA-D-GLUCOSIDE	Fruit Juice				--
0	PETUNIDIN-3-(6-P-COUMAROYLGLUCOSIDE)	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	(DL)-GALLOCATECHIN	Leaf				--
38	(-)-EPICATECHIN	Leaf				--
15	MALIC-ACID	Plant				--
0	6-9-DIHYDROXY-MEGASTIGM-7-EN-3-ONE	Fruit				--
9	BENZYL-ALCOHOL	Leaf				--
0	CIS-COUTARIC-ACID	Fruit Juice				--
19	PTEROSTILBENE	Leaf				--
0	PAEONIDIN-3-5,-DIGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	GENTISIC-ACID	Hull Husk				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	TARTARIC-ACID	Leaf				--
0	DELPHINIDIN-3,5-DIGLUCOSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	PROCYANIDIN-B-2-3'-O-GALLATE	Seed				--
0	CAFFEYL TARTARIC-ACID	Fruit				--
12	STIGMASTEROL	Seed				--
7	ASTRAGALIN	Leaf				--
0	3,7-DIMETHYL-OCT-1-ENE-3,6,7-TRIOL	Fruit				--
12	STIGMASTEROL	Root				--
1	OLEANOLIC-ACID-METHYL-ESTER	Leaf				--
43	PROTOCATECHUIC-ACID	Leaf				--
0	DEHYDROHEXAHYDROXY DIPHENIC-ACID	Leaf				Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
0	CRYPTOCHLOROGENIC-ACID	Fruit				Jim Duke's personal files.
0	MUTATOXANTHIN	Fruit				--
2	ERUCIC-ACID	Seed				--
21	LUPEOL	Leaf				--
20	LECITHIN	Seed				--
30	HYPEROSIDE	Leaf				--