

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Papaver somniferum

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	(+)-LAUDANIDINE	Fruit				--
0	(+)-RETICULINE	Fruit				--
0	(+)-RETICULINE	Latex Exudate				--
0	(-)-ALPHA-NARCOTINE	Inflorescence				--
0	(-)-NARCOTOLINE	Inflorescence				--
0	(-)-SCOULERINE	Latex Exudate				--
0	(-)-SCOULERINE	Plant				--
0	10-HYDROXYCODEINE	Latex Exudate				--
0	10-NONACOSANOL	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	13-OXOCRYPTOPINE	Plant				--
0	16-HYDROXYTHEBAINE	Plant				--
0	20-HYDROXY-TRICOSANYLCYCLOHEXANE	Fruit		36.0		--
0	4-HYDROXY-BENZOIC-ACID	Pericarp				--
0	4-METHYL-NONACOSANE	Fruit		3.2		--
0	5'-O-DEMETHYLNARCOTINE	Plant				--
0	5-HYDROXY-3,7-DIMETHOXYPHENANTHRENE	Latex Exudate				--
0	6-ACTEONLYDIHYDROSANGUINARINE	Plant				--
0	6-METHYL-CODEINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	6-METHYL-CODEINE	Fruit				--
0	ACONITASE	Latex Exudate				--
32	AESCULETIN	Pericarp				--
3	ALANINE	Seed	11780.0	12637.0	0.5273634907250652	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALKALOIDS	Latex Exudate	50000.0	250000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
5	ALLOCRYPTOPINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
15	ALPHA-LINOLENIC-ACID	Seed	1400.0	5564.0	-0.22115561650586155	--
2	ALPHA-NARCOTINE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
17	APOMORPHINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	APOREINE	Fruit				--
0	ARABINOSE	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ARACHIDIC-ACID	Seed Oil				--
0	ARACHIDIC-ACID	Seed	1720.0	1920.0	-0.4678536622769215	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	ARGININE	Seed	19950.0	21401.0	-0.1371677842175051	--
112	ASCORBIC-ACID	Fruit		1120.0	-0.21485077361679586	--
112	ASCORBIC-ACID	Seed		0.0	-0.33845664486186666	--
112	ASCORBIC-ACID	Tissue Culture				--
0	ASH	Seed	65450.0	75060.0	0.8175065645162889	--
3	ASPARTIC-ACID	Seed	22020.0	23622.0	0.09170736062604648	--
1	BEHENIC-ACID	Latex Exudate				--
130	BERBERINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
53	BETA-CAROTENE	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
47	BETA-SITOSTEROL	Seed	520.0	550.0	-0.4199216005919147	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
47	BETA-SITOSTEROL	Fruit				--
4	BORON	Seed	15.0	95.0	3.362596404439195	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).
102	CAFFEIC-ACID	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
102	CAFFEIC-ACID	Pericarp				--
28	CALCIUM	Seed	13807.0	16214.0	2.216307236056363	--
2	CAMPESTEROL	Seed	200.0	240.0	-0.1263974543876007	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
1	CANADINE	Plant				--
0	CAOUTCHOUC	Latex Exudate	50000.0	100000.0	0.9231280046840273	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CARBOHYDRATES	Seed	236900.0	254130.0	-1.0701424676432536	--
1	CATALASE	Latex Exudate				--
0	CERYL-PALMITATE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
20	CHOLINE	Plant				--
24	CHROMIUM	Seed		13.4	1.269730108106075	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	COBALT	Seed		0.4	-0.1885954172151604	--
0	CODAMINE	Plant				--
0	CODAMINE	Latex Exudate		10.0		--
0	CODAMINE	Fruit				--
14	CODEINE	Tissue Culture	34.0	200.0		--
14	CODEINE	Hypocotyl				--
14	CODEINE	Shoot		14.0		--
14	CODEINE	Seed	0.1	440.0		--
14	CODEINE	Gum		35000.0		--
14	CODEINE	Resin, Exudate, Sap		34700.0		--
14	CODEINE	Fruit	400.0	1320.0		--
14	CODEINE	Root	100.0	200.0		--
14	CODEINE	Stem		100.0		--
14	CODEINE	Leaf	60.0	430.0		--
14	CODEINE	Plant				--
14	CODEINE	Inflorescence				--
14	CODEINE	Latex Exudate	5000.0	40000.0		--
0	CODEINE-N-OXIDE	Fruit		50.0		--
0	CODEINE-N-OXIDE	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	CODEINONE	Plant				Father Nature's Pharmacy: The aggregate of all these three-letter citations.
12	COPPER	Seed	16.0	23.0	0.7424671767599702	--
3	COPTISINE	Plant				--
3	COPTISINE	Leaf				--
3	COPTISINE	Stem				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	COPTISINE	Seed				--
3	COPTISINE	Root				--
2	COREXIMINE	Plant				--
3	CORYTUBERINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	COTARNOLINE	Fruit				--
1	CRYPTOPINE	Tissue Culture				--
1	CRYPTOPINE	Plant				--
1	CRYPTOPINE	Fruit				--
1	CRYPTOPINE	Gum		1000.0		--
1	CRYPTOPINE	Latex Exudate				--
7	CYCLOARTENOL	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	CYCLOARTENONE	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	CYCLOLAUDENOL	Latex Exudate				--
0	CYCLOLAUDENONE	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
2	CYSTINE	Seed	4530.0	4859.0	1.188948364030366	--
1	D-GLUCOSE	Plant				--
0	D-MANNOHEPTULOSE	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
5	DAUCOSTEROL	Fruit				--
0	DESMETHYLEPIPORPHYR OXINS	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
1	DEXTROSE	Latex Exudate	27000.0	33000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	DIASTASE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DIHYDROPTOPINE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIHYDROSANGUINARINE	Plant				--
0	DIHYDROSANGUINARINE	Tissue Culture				--
0	DOPA-DECARBOXYLASE	Latex Exudate				--
20	DOPAMINE	Latex Exudate				--
20	DOPAMINE	Tissue Culture				--
0	EMULSIN	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ERYTHRITOL	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
0	FAT	Seed	400000.0	550000.0	1.4991553625628231	--
61	FERULIC-ACID	Pericarp				--
15	FIBER	Seed	58080.0	71818.0	-0.49714940919128525	--
0	FIXED-OIL	Plant				--
0	FUMARASE	Latex Exudate				--
0	GADOLEIC-ACID	Seed	400.0	429.0	-0.6684981302639723	--
0	GLAUDINE	Plant				--
0	GLUTAMATE- OXALOACETATE- TRANSAMINASE	Latex Exudate				--
0	GLUTAMATE-PYRUVATE- TRANSAMINASE	Latex Exudate				--
8	GLUTAMIC-ACID	Seed	45410.0	48713.0	0.2953271998679615	--
12	GLYCINE	Seed	11230.0	12047.0	0.15829068106143418	--
0	GLYOXYLATE-REDUCTASE	Latex Exudate				--
0	GNOSCOPINE	Plant				--
0	GNOSCOPINE	Fruit				--
7	HISTIDINE	Seed	5280.0	5664.0	-0.12231192018547095	--
0	HYDROCOTARNINE	Fruit				--
0	HYDROCOTARNINE	Plant				--
0	HYDROXYCODEINE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	INVERTASE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
12	IODINE	Seed		0.006	-0.27786693191236994	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	IRON	Seed	91.0	143.0	-0.03620914616399296	--
5	ISOBOLDINE	Plant				--
5	ISOBOLDINE	Latex Exudate				--
0	ISOCITRATE-DEHYDROGENASE	Latex Exudate				--
0	ISOCITRATE-LYASE	Latex Exudate				--
0	ISOCORYPALMINE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ISOLEUCINE	Seed	9050.0	9708.0	-0.09998279304064013	--
22	ISOQUERCITRIN	Flower				--
2	ISOQUINOLINE	Plant				--
0	KILOCALORIES	Seed	5330.0	5718.0	0.6724550008044287	--
0	L-DOPA-DECARBOXYLASE	Latex Exudate				--
0	LACTATE-DEHYDROGENASE	Latex Exudate				--
8	LACTIC-ACID	Latex Exudate	10000.0	20000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LANTHOPINE	Fruit				--
0	LANTHOPINE	Plant				--
0	LAUDANIDINE	Latex Exudate		30.0		--
0	LAUDANIDINE	Plant				--
1	LAUDANINE	Latex Exudate		100.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	LAUDANINE	Plant				--
4	LAUDANOSINE	Gum				--
4	LAUDANOSINE	Latex Exudate				--
4	LAUDANOSINE	Fruit				--
4	LAUDANOSINE	Plant				--
7	LAURIC-ACID	Seed Oil				--
0	LAUROLEIC-ACID	Seed Oil				--
20	LECITHIN	Seed		28000.0	0.024823897304513683	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LEUCINE	Seed	14840.0	15919.0	-0.11126836523363871	--
1	LIGNOCERIC-ACID	Latex Exudate				--
27	LINOLEIC-ACID	Seed	300335.0	309465.0	1.7336932275463397	--
27	LINOLEIC-ACID	Latex Exudate				--
27	LINOLEIC-ACID	Seed Oil				--
0	LINOLENOLEIC-ACID	Seed Oil				--
0	LIPASE	Latex Exudate				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	LYSINE	Seed	10990.0	11789.0	-0.0419384760006119	--
65	MAGNESIUM	Seed	3148.0	15600.0	4.99947138282473	--
11	MAGNOFLORINE	Latex Exudate				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MALATE-DEHYDROGENASE	Latex Exudate				--
15	MALIC-ACID	Latex Exudate				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	MALTASE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	MANGANESE	Seed	29.0	68.0	0.18035715210387018	--
0	MECONIC-ACID	Gum				--
0	MECONIC-ACID	Latex Exudate		100000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MECONIDINE	Fruit				--
0	MECONIN	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MECONINE	Latex Exudate				--
0	MECONISIN	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	METHIONINE	Seed	4700.0	5042.0	0.1877773797959893	--
22	MORPHINE	Leaf	28.0	8950.0		--
22	MORPHINE	Resin, Exudate, Sap		196000.0		--
22	MORPHINE	Fruit	150.0	11200.0		--
22	MORPHINE	Gum		115000.0		--
22	MORPHINE	Stem	10.0	300.0		--
22	MORPHINE	Inflorescence				--
22	MORPHINE	Root	200.0	3900.0		--
22	MORPHINE	Hypocotyl				--
22	MORPHINE	Plant	900.0	2000.0		--
22	MORPHINE	Shoot	39.0	1000.0		--
22	MORPHINE	Latex Exudate	30000.0	250000.0		--
22	MORPHINE	Seed	0.3	390.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MORPHINE-N-OXIDE	Stem				--
0	MORPHINE-N-OXIDE	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	MORPHINE-N-OXIDE	Fruit		60.0		--
0	MYO-INOSITOL	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
6	MYRISTIC-ACID	Seed Oil				--
1	MYRISTOLEIC-ACID	Seed Oil				--
0	N-METHYL-14-DEACETYLI SOPORPHYROXINE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	N-METHYL-14-O-DESMETHYLEPIPORPHYROXINE	Plant				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	NARCEINAMIDE	Fruit				--
6	NARCEINE	Gum				--
6	NARCEINE	Tissue Culture				--
6	NARCEINE	Plant				--
6	NARCEINE	Fruit		38.0		--
6	NARCEINE	Latex Exudate		2000.0		--
0	NARCEINE-IMIDE	Plant				--
0	NARCEINONE	Fruit		31.0		--
0	NARCERINE	Fruit		20.0		Chemical Constituents of Oriental Herbs (3 diff. books)
0	NARCOTALINE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
6	NARCOTINE	Latex Exudate	10000.0	125000.0		--
6	NARCOTINE	Fruit		200.0		--
6	NARCOTINE	Seed	0.8	2300.0		--
6	NARCOTINE	Shoot				--
6	NARCOTINE	Gum		62500.0		--
6	NARCOTINE	Resin, Exudate, Sap		60000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	NARCOTINE	Plant		14.0		--
0	NARCOTOLINE	Fruit				--
0	NARCOTOLINE	Latex Exudate				--
0	NARCOTOLINE	Root				--
0	NARCOTOLINE	Plant		167.0		--
2	NEOPINE	Latex Exudate		50.0		--
2	NEOPINE	Fruit				--
2	NEOPINE	Plant				--
39	NIACIN	Seed	9.2	11.0	-0.9544805684815751	--
11	NICOTINIC-ACID	Leaf		1000.0	0.4235889253321141	--
0	NONACOSAN-1,8-DIOL	Fruit		10.0		--
0	NONACOSAN-1-OL	Fruit				--
0	NORMORPHINE	Plant				--
0	NORNARCEINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	NORSANGUINARINE	Tissue Culture				--
2	NOSCAPINE	Latex Exudate	40000.0	60000.0		--
2	NOSCAPINE	Gum				--
2	NOSCAPINE	Plant				--
2	NOSCAPINE	Resin, Exudate, Sap				--
0	O-METHYLSOMNIFERINE	Inflorescence				--
0	OCTACOSAN-1-OL	Fruit				--
0	OCTADECADIENOIC-ACID	Seed				--
0	OCTADECENOIC-ACID	Seed				--
18	OLEIC-ACID	Seed	56230.0	71872.0	-0.3882701720005955	--
18	OLEIC-ACID	Latex Exudate				--
18	OLEIC-ACID	Seed Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	OPIONIN	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	OPIUM	Latex Exudate				--
0	ORIENTALINE	Plant				--
3	ORIPAVINE	Fruit		1000.0		--
9	OXALIC-ACID	Seed		16200.0	2.629403151554455	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	OXOSANGUINARINE	Tissue Culture				--
0	OXYCRYPTOPINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	OXYDASE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	OXYDIMORPHINE	Plant				--
0	OXYMORPHINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	OXYNARCOTINE	Plant				--
0	OXYNARCOTINE	Fruit				--
0	OXYSANGUINARINE	Plant				--
25	P-COUMARIC-ACID	Pericarp				--
0	P-VINYL-PHENOL	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
0	PACODINE	Plant				--
0	PALAUDINE	Latex Exudate				--
0	PALAUDINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
13	PALMITIC-ACID	Seed Oil				--
13	PALMITIC-ACID	Latex Exudate				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Seed	38630.0	46620.0	0.26232081926786494	--
2	PALMITOLEIC-ACID	Seed Oil				--
2	PALMITOLEIC-ACID	Seed	1300.0	1394.0	-0.26500524295328565	--
0	PAPAVERALDINE	Latex Exudate				--
0	PAPAVERALDINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	PAPAVERAMINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
26	PAPAVERINE	Tissue Culture		45.0		--
26	PAPAVERINE	Plant				--
26	PAPAVERINE	Resin, Exudate, Sap		4000.0		--
26	PAPAVERINE	Gum		7500.0		--
26	PAPAVERINE	Fruit	20.0	820.0		--
26	PAPAVERINE	Latex Exudate	5000.0	10000.0		--
26	PAPAVERINE	Root				--
26	PAPAVERINE	Seed	0.2	670.0		--
0	PAPAVERRUBINE-C	Plant				--
0	PAPAVERRUBINE-D	Plant				--
0	PAPAVERRUBINE-D	Latex Exudate				--
0	PAPAVERUBINES	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
24	PECTIN	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PENTACOSAN-7-ONE	Fruit		28.5		--
0	PENTOSANS	Seed	30000.0	36000.0	-0.889197654700376	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PEROXIDASE	Latex Exudate				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	PHENYLALANINE	Seed	8820.0	9461.0	-0.24832088153969623	--
0	PHENYLALANINE-DECARBOXYLASE	Latex Exudate				--
4	PHOSPHORIC-ACID	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	PHOSPHORUS	Seed	8290.0	9277.0	1.0368589821266212	--
0	PHYTATE	Seed	21890.0	23290.0	1.3787678314626066	--
2	PHYTOSTEROLS	Seed	890.0	955.0	-0.3885675277621441	--
0	PORPHYROXINE	Fruit				--
14	POTASSIUM	Seed	5250.0	8179.0	-0.38616474942864093	--
0	PROLINE	Seed	10620.0	11392.0	0.011029112372475834	--
0	PROTEASE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROTEIN	Seed	175256.0	198532.0	-0.3136921431131898	--
24	PROTOPINE	Fruit				--
24	PROTOPINE	Tissue Culture				--
0	PSEUDOMORPHINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
1	PYRROLIDINE	Latex Exudate				Chemical Constituents of Oriental Herbs (3 diff. books)
0	QUERCETIN-3-GENTIOBIOSIDE	Flower				--
0	R-RETICULINE	Shoot				--
0	R-RETICULINE	Latex Exudate				--
0	R-RETICULINE	Leaf				--
0	R-RETICULINE	Sprout Seedling				--
10	RETICULINE	Plant				--
10	RETICULINE	Latex Exudate				--
10	RETICULINE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	RHOEADINE	Plant				--
3	RHOEADINE	Fruit				--
15	RIBOFLAVIN	Seed	1.6	1.93	-0.6109902953396645	--
0	ROEMERINE	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	S-RETICULINE	Shoot				--
0	S-RETICULINE	Latex Exudate				--
0	S-RETICULINE	Leaf				--
7	SALICYLATES	Seed		0.0	-0.3401776874861938	--
0	SALUTARIDINE	Latex Exudate				--
0	SALUTARIDINE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	SALUTARIDINE	Shoot				--
0	SALUTARIDINE	Leaf				--
0	SALUTARIDINOL	Plant				Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	SALUTARIDINOLE	Plant				--
48	SANGUINARINE	Leaf				--
48	SANGUINARINE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
48	SANGUINARINE	Stem				--
48	SANGUINARINE	Root				--
48	SANGUINARINE	Tissue Culture				--
0	SEDOHEPTULOSE	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
1	SERINE	Seed	9870.0	10588.0	0.002624156751364612	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	SINAPIC-ACID	Pericarp				--
0	SITOSTEROL	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	SODIUM	Seed	155.0	300.0	-0.23949097118534637	--
2	SOMNIFERINE	Inflorescence				--
10	SQUALENE	Seed		59.0	-1.1722641630833899	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Latex Exudate				--
8	STEARIC-ACID	Seed Oil				--
8	STEARIC-ACID	Seed	5890.0	8036.0	-0.39103612812530036	--
0	STEPHOLIDINE	Plant				--
0	STEPHOLIDINE	Latex Exudate				--
12	STIGMASTEROL	Seed	50.0	55.0	-0.46035749483774474	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
0	SUCCINATE-DEHYDROGENASE	Latex Exudate				--
7	SUCCINIC-ACID	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	SULFURIC-ACID	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	TARTARIC-ACID	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	TETRAHYDROCOLUMBAMINE	Latex Exudate				--
9	TETRAHYDROPALMATINE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TETRAHYDROPAPAVERIN E	Plant				--
7	THEBAINE	Resin, Exudate, Sap		17300.0		--
7	THEBAINE	Leaf				--
7	THEBAINE	Stem				--
7	THEBAINE	Inflorescence				--
7	THEBAINE	Shoot				--
7	THEBAINE	Plant				--
7	THEBAINE	Tissue Culture	20.0	45.0		--
7	THEBAINE	Latex Exudate	1000.0	25000.0		--
7	THEBAINE	Seed	10.0	410.0		--
7	THEBAINE	Hypocotyl				--
7	THEBAINE	Root				--
7	THEBAINE	Fruit		7800.0		--
7	THEBAINE	Gum		22500.0		--
0	THEBAOL	Latex Exudate				--
0	THEBAOL	Plant				--
31	THIAMIN	Seed	7.8	9.9	0.7911069322871558	--
4	THREONINE	Seed	9050.0	9708.0	0.35132307430924015	--
0	TOCOPHEROLS	Seed		200.0	-0.5714302102468665	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
29	TRYPTOPHAN	Seed	2550.0	2735.0	-0.20124145083987593	--
8	TYROSINE	Seed	6810.0	7305.0	-0.10104412588518938	--
0	TYROSINE-DECARBOXYLASE	Latex Exudate				--
0	UREASE	Latex Exudate				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	VALINE	Seed	12870.0	13806.0	0.2210059089928253	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
24	VANILLIC-ACID	Pericarp				--
0	VIT-A	Fruit		7.2		--
0	VIT-B-6	Seed	4.4	4.7	-0.05123693144565975	--
0	WATER	Seed	62250.0	73300.0	-0.5921407063022331	--
0	WAX	Latex Exudate	60000.0	136000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	XANTHALINE	Fruit				--
77	ZINC	Seed	24.0	130.0	2.4094178972857168	--