

P Papaver somniferum

Common Name(s)

Opium Poppy, Poppyseed Poppy

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-LAUDANIDINE	Fruit	--	--	
0	(+)-RETICULINE	Latex Exudate	--	--	
0	(+)-RETICULINE	Fruit	--	--	
0	(-)-ALPHA-NARCOTINE	Inflorescence	--	--	
0	(-)-NARCOTOLINE	Inflorescence	--	--	
0	(-)-SCOULERINE	Plant	--	--	
0	(-)-SCOULERINE	Latex Exudate	--	--	
0	10-HYDROXYCODEINE	Latex Exudate	--	--	
0	10-NONACOSANOL	Latex Exudate	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	13-OXOCRYPTOPINE	Plant	--	--	
0	16-HYDROXYTHEBAINE	Plant	--	--	
0	20-HYDROXY-TRICOSANYLCYCLOHEXANE	Fruit	--	36	
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	12637	0.5273634907250652
0	ALKALOIDS	Latex Exudate	50000	250000	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	5564	-0.22115561650586155

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
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	1720	1920	-0.4678536622769215
					ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ARACHIDIC-ACID	Seed Oil	--	--	
14	ARGININE	Seed	19950	21401	-0.1371677842175051
112	ASCORBIC-ACID	Seed	--	--	-0.33845664486186666
112	ASCORBIC-ACID	Fruit	--	1120	-0.21485077361679586
112	ASCORBIC-ACID	Tissue Culture	--	--	
0	ASH	Seed	65450	75060	0.8175065645162889
3	ASPARTIC-ACID	Seed	22020	23622	0.09170736062604648
1	BEHENIC-ACID	Latex Exudate	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
130	BERBERINE	Plant	--	--		Father Nature's Farmacy: The aggregate of all these three-letter citations.
53	BETA-CAROTENE	Seed	--	--		
47	BETA-SITOSTEROL	Seed	520	550	-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	95	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	16214	2.216307236056363	
2	CAMPESTEROL	Seed	200	240	-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	100000	0.9231280046840273	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CARBOHYDRATES	Seed	236900	254130	-1.0701424676432536	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	13.4	1.269730108106075
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	0.4	-0.1885954172151604
0	CODAMINE	Plant	--	--	
0	CODAMINE	Latex Exudate	--	10	
0	CODAMINE	Fruit	--	--	
14	CODEINE	Latex Exudate	5000	25000	
14	CODEINE	Plant	--	--	
14	CODEINE	Fruit	400	1320	
14	CODEINE	Resin, Exudate, Sap	--	34700	
14	CODEINE	Gum	--	35000	
14	CODEINE	Seed	0.1	440	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
14	CODEINE	Shoot	--	14	
14	CODEINE	Hypocotyl	--	--	
14	CODEINE	Tissue Culture	34	200	
14	CODEINE	Inflorescence	--	--	
14	CODEINE	Leaf	60	430	
14	CODEINE	Stem	--	100	
14	CODEINE	Root	100	200	
0	CODEINE-N-OXIDE	Latex Exudate	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
0	CODEINE-N-OXIDE	Fruit	--	50	
0	CODEINONE	Plant	--	--	Father Nature's Farmacy: The aggregate of all these three-letter citations.
12	COPPER	Seed	16	23	0.7424671767599702
3	COPTISINE	Plant	--	--	
3	COPTISINE	Seed	--	--	
3	COPTISINE	Root	--	--	
3	COPTISINE	Stem	--	--	
3	COPTISINE	Leaf	--	--	
2	COREXIMINE	Plant	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CORYTUBERINE	Plant	--	--	Father Nature's Pharmacy: The aggregate of all these three-letter citations.
0	COTARNOLINE	Fruit	--	--	
1	CRYPTOPINE	Plant	--	--	
1	CRYPTOPINE	Latex Exudate	--	--	
1	CRYPTOPINE	Gum	--	1000	
1	CRYPTOPINE	Fruit	--	--	
1	CRYPTOPINE	Tissue Culture	--	--	
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	4859	1.188948364030366
1	D-GLUCOSE	Plant	--	--	
0	D-MANNOHEPTULOSE	Fruit	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
5	DAUCOSTEROL	Fruit	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DESMETHYLEPIPORPHYROXINS	Plant	--	--	Father Nature's Farmacy: The aggregate of all these three-letter citations.
1	DEXTROSE	Latex Exudate	27000	33000	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	DIHYDROPROTOPINE	Plant	--	--	
0	DIHYDROSANGUINARINE	Plant	--	--	
0	DIHYDROSANGUINARINE	Tissue Culture	--	--	
0	DOPA-DECARBOXYLASE	Latex Exudate	--	--	
20	DOPAMINE	Tissue Culture	--	--	
20	DOPAMINE	Latex Exudate	--	--	
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	550000	1.4991553625628231

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
61	FERULIC-ACID	Pericarp	--	--	
15	FIBER	Seed	58080	71818	-0.49714940919128525
0	FIXED-OIL	Plant	--	--	
0	FUMARASE	Latex Exudate	--	--	
0	GADOLEIC-ACID	Seed	400	429	-0.6684981302639723
0	GLAUDINE	Plant	--	--	
0	GLUTAMATE-OXALOACETATE-TRANSAMINASE	Latex Exudate	--	--	
0	GLUTAMATE-PYRUVATE-TRANSAMINASE	Latex Exudate	--	--	
8	GLUTAMIC-ACID	Seed	45410	48713	0.2953271998679615
12	GLYCINE	Seed	11230	12047	0.15829068106143418
0	GLYOXYLATE-REDUCTASE	Latex Exudate	--	--	
0	GNOSCOPEINE	Plant	--	--	
0	GNOSCOPEINE	Fruit	--	--	
7	HISTIDINE	Seed	5280	5664	-0.12231192018547095
0	HYDROCOTARNINE	Plant	--	--	
0	HYDROCOTARNINE	Fruit	--	--	
0	HYDROXYCODEINE	Plant	--	--	

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	0.006	-0.27786693191236994 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	IRON	Seed	91	143	-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	9708	-0.09998279304064013
22	ISOQUERCITRIN	Flower	--	--	
2	ISOQUINOLINE	Plant	--	--	
0	KILOCALORIES	Seed	5330	5718	0.6724550008044287
0	L-DOPA-DECARBOXYLASE	Latex Exudate	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LACTATE-DEHYDROGENASE	Latex Exudate	--	--	
8	LACTIC-ACID	Latex Exudate	10000	20000	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LANTHOPINE	Plant	--	--	
0	LANTHOPINE	Fruit	--	--	
0	LAUDANIDINE	Plant	--	--	
0	LAUDANIDINE	Latex Exudate	--	30	
1	LAUDANINE	Plant	--	--	
1	LAUDANINE	Latex Exudate	--	100	
4	LAUDANOSINE	Plant	--	--	
4	LAUDANOSINE	Fruit	--	--	
4	LAUDANOSINE	Latex Exudate	--	--	
4	LAUDANOSINE	Gum	--	--	
7	LAURIC-ACID	Seed Oil	--	--	
0	LAUROLEIC-ACID	Seed Oil	--	--	
20	LECITHIN	Seed	28000	28000	0.024823897304513683 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	LEUCINE	Seed	14840	15919	-0.11126836523363871
1	LIGNOCERIC-ACID	Latex Exudate	--	--	
27	LINOLEIC-ACID	Seed	300335	309465	1.7336932275463397
27	LINOLEIC-ACID	Seed Oil	--	--	
27	LINOLEIC-ACID	Latex Exudate	--	--	
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	11789	-0.0419384760006119
65	MAGNESIUM	Seed	3148	15600	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.

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	68	0.18035715210387018
0	MECONIC-ACID	Latex Exudate	100000	100000	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MECONIC-ACID	Gum	--	--	
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	5042	0.1877773797959893
22	MORPHINE	Fruit	150	4100	
22	MORPHINE	Leaf	28	700	
22	MORPHINE	Latex Exudate	30000	250000	
22	MORPHINE	Plant	900	1800	
22	MORPHINE	Root	200	3900	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
22	MORPHINE	Stem	10	30	
22	MORPHINE	Gum	--	115000	
22	MORPHINE	Resin, Exudate, Sap	--	196000	
22	MORPHINE	Seed	0.3	390	
22	MORPHINE	Shoot	39	1000	
22	MORPHINE	Hypocotyl	--	--	
22	MORPHINE	Inflorescence	--	--	
0	MORPHINE-N-OXIDE	Latex Exudate	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
0	MORPHINE-N-OXIDE	Fruit	--	60	
0	MORPHINE-N-OXIDE	Stem	--	--	
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-DEACETYLISOPORPHYROXINE	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.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	NARCEINAMIDE	Fruit	--	--	
6	NARCEINE	Fruit	--	38	
6	NARCEINE	Plant	--	--	
6	NARCEINE	Latex Exudate	20	2000	
6	NARCEINE	Tissue Culture	--	--	
6	NARCEINE	Gum	--	--	
0	NARCEINE-IMIDE	Plant	--	--	
0	NARCEINONE	Fruit	--	31	
0	NARCERINE	Fruit	--	20	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	70000	
6	NARCOTINE	Plant	--	14	
6	NARCOTINE	Fruit	--	200	
6	NARCOTINE	Resin, Exudate, Sap	--	60000	
6	NARCOTINE	Gum	--	62500	
6	NARCOTINE	Shoot	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
6	NARCOTINE	Seed	0.8	2300	
0	NARCOTOLINE	Plant	--	167	
0	NARCOTOLINE	Fruit	--	--	
0	NARCOTOLINE	Root	--	--	
0	NARCOTOLINE	Latex Exudate	--	--	
2	NEOPINE	Plant	--	--	
2	NEOPINE	Latex Exudate	--	50	
2	NEOPINE	Fruit	--	--	
39	NIACIN	Seed	9.2	11	-0.9544805684815751
11	NICOTINIC-ACID	Leaf	--	1000	0.4235889253321141
0	NONACOSAN-1,8-DIOL	Fruit	--	10	
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	60000	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	NOSCAPINE	Resin, Exudate, Sap	--	--		
2	NOSCAPINE	Plant	--	--		
2	NOSCAPINE	Gum	--	--		
0	O-METHYLSOMNIFERINE	Inflorescence	--	--		
0	OCTACOSAN-1-OL	Fruit	--	--		
0	OCTADECADIENOIC-ACID	Seed	--	--		
0	OCTADECENOIC-ACID	Seed	--	--		
18	OLEIC-ACID	Seed	56230	71872	-0.3882701720005955	
18	OLEIC-ACID	Seed Oil	--	--		
18	OLEIC-ACID	Latex Exudate	--	--		
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		
9	OXALIC-ACID	Seed	16200	16200	2.629403151554455	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	Plant	--	--	Father Nature's Farmacy: The aggregate of all these three-letter citations.
0	PALAUDINE	Latex Exudate	--	--	
13	PALMITIC-ACID	Seed	38630	46620	0.26232081926786494

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Latex Exudate	--	--	
13	PALMITIC-ACID	Seed Oil	--	--	
2	PALMITOLEIC-ACID	Seed	1300	1394	-0.26500524295328565
2	PALMITOLEIC-ACID	Seed Oil	--	--	
0	PAPAVERALDINE	Plant	--	--	Father Nature's Pharmacy: The aggregate of all these three-letter citations.
0	PAPAVERALDINE	Latex Exudate	--	--	
0	PAPAVERAMINE	Plant	--	--	Father Nature's Pharmacy: The aggregate of all these three-letter citations.
26	PAPAVERINE	Fruit	20	820	
26	PAPAVERINE	Latex Exudate	5000	10000	
26	PAPAVERINE	Gum	--	7500	
26	PAPAVERINE	Resin, Exudate, Sap	--	4000	
26	PAPAVERINE	Plant	--	--	
26	PAPAVERINE	Tissue Culture	--	45	
26	PAPAVERINE	Seed	0.2	670	
26	PAPAVERINE	Root	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	PAPAVERRUBINE-C	Plant	--	--		
0	PAPAVERRUBINE-D	Latex Exudate	--	--		
0	PAPAVERRUBINE-D	Plant	--	--		
0	PAPAVERRUBINES	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	36000	-0.889197654700376	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PEROXIDASE	Latex Exudate	--	--		
7	PHENYLALANINE	Seed	8820	9461	-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	9277	1.0368589821266212	
0	PHYTATE	Seed	21890	23290	1.3787678314626066	
2	PHYTOSTEROLS	Seed	890	955	-0.3885675277621441	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	PORPHYROXINE	Fruit	--	--	
14	POTASSIUM	Seed	5250	8179	-0.38616474942864093
0	PROLINE	Seed	10620	11392	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	198532	-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	Sprout Seedling	--	--	
0	R-RETICULINE	Leaf	--	--	
0	R-RETICULINE	Latex Exudate	--	--	
0	R-RETICULINE	Shoot	--	--	
10	RETICULINE	Plant	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
10	RETICULINE	Fruit	--	--	
10	RETICULINE	Latex Exudate	--	--	
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	Leaf	--	--	
0	S-RETICULINE	Latex Exudate	--	--	
0	S-RETICULINE	Shoot	--	--	
7	SALICYLATES	Seed	--	--	-0.3401776874861938
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	Latex Exudate	--	--	
0	SALUTARIDINE	Leaf	--	--	
0	SALUTARIDINE	Shoot	--	--	
0	SALUTARIDINOL	Plant	--	--	Father Nature's Farmacy: The aggregate of all these three-letter citations.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	SALUTARIDINOLE	Plant	--	--	
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	Tissue Culture	--	--	
48	SANGUINARINE	Root	--	--	
48	SANGUINARINE	Stem	--	--	
48	SANGUINARINE	Leaf	--	--	
0	SEDOHEPTULOSE	Fruit	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
1	SERINE	Seed	9870	10588	0.002624156751364612
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	300	-0.23949097118534637
2	SOMNIFERINE	Inflorescence	--	--	
10	SQUALENE	Seed	59	59	-1.1722641630833899 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Seed	5890	8036	-0.39103612812530036

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Seed Oil	--	--	
8	STEARIC-ACID	Latex Exudate	--	--	
0	STEPHOLIDINE	Plant	--	--	
0	STEPHOLIDINE	Latex Exudate	--	--	
12	STIGMASTEROL	Seed	50	55	-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	--	--	
0	TETRAHYDROPAPAVERINE	Plant	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
7	THEBAINE	Latex Exudate	1000	25000	
7	THEBAINE	Fruit	--	7800	
7	THEBAINE	Resin, Exudate, Sap	--	17300	
7	THEBAINE	Gum	--	22500	
7	THEBAINE	Root	--	--	
7	THEBAINE	Hypocotyl	--	--	
7	THEBAINE	Seed	10	410	
7	THEBAINE	Tissue Culture	20	45	
7	THEBAINE	Plant	--	--	
7	THEBAINE	Shoot	--	--	
7	THEBAINE	Inflorescence	--	--	
7	THEBAINE	Stem	--	--	
7	THEBAINE	Leaf	--	--	
0	THEBAOL	Plant	--	--	
0	THEBAOL	Latex Exudate	--	--	
31	THIAMIN	Seed	7.8	9.9	0.7911069322871558
4	THREONINE	Seed	9050	9708	0.35132307430924015

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	TOCOPHEROLS	Seed	200	200	-0.5714302102468665 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
29	TRYPTOPHAN	Seed	2550	2735	-0.20124145083987593
8	TYROSINE	Seed	6810	7305	-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	13806	0.2210059089928253
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	73300	-0.5921407063022331
0	WAX	Latex Exudate	60000	136000	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	130	2.4094178972857168