

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Papaver somniferum*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
32	AESCULETIN	Pericarp	--	--		
3	ALANINE	Seed	11780	12637	0.5273634907250652	
5	ALLOCRYPTOPINE	Plant	--	--		Father Nature's Farmacy: The aggregate of all these three-letter citations.
15	ALPHA-LINOLENIC-ACID	Seed	1400	5564	-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.
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	--	--		
3	ASPARTIC-ACID	Seed	22020	23622	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	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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4	BORON	Seed	15	95	3.362596404439195	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages.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	--	--		
1	CATALASE	Latex Exudate	--	--		
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	
14	CODEINE	Latex Exudate	5000	25000		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	CODEINE	Plant	--	--		
14	CODEINE	Fruit	400	1320		
14	CODEINE	Resin, Exudate, Sap	--	34700		
14	CODEINE	Gum	--	35000		
14	CODEINE	Seed	0.1	440		
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		
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	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CORYTUBERINE	Plant	--	--		Father Nature's Farmacy: The aggregate of all these three-letter citations.
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)
2	CYSTINE	Seed	4530	4859	1.188948364030366	
1	D-GLUCOSE	Plant	--	--		
5	DAUCOSTEROL	Fruit	--	--		
1	DEXTROSE	Latex Exudate	27000	33000		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
20	DOPAMINE	Tissue Culture	--	--		
20	DOPAMINE	Latex Exudate	--	--		
2	ERYTHRITOL	Fruit	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
61	FERULIC-ACID	Pericarp	--	--		
15	FIBER	Seed	58080	71818	-0.49714940919128525	
8	GLUTAMIC-ACID	Seed	45410	48713	0.2953271998679615	
12	GLYCINE	Seed	11230	12047	0.15829068106143418	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	HISTIDINE	Seed	5280	5664	-0.12231192018547095	
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	--	--		
3	ISOLEUCINE	Seed	9050	9708	-0.09998279304064013	
22	ISOQUERCITRIN	Flower	--	--		
2	ISOQUINOLINE	Plant	--	--		
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.
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	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
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	--	--		
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.
15	MALIC-ACID	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	
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		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
22	MORPHINE	Root	200	3900		
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	--	--		
6	MYRISTIC-ACID	Seed Oil	--	--		
1	MYRISTOLEIC-ACID	Seed Oil	--	--		
6	NARCEINE	Fruit	--	38		
6	NARCEINE	Plant	--	--		
6	NARCEINE	Latex Exudate	20	2000		
6	NARCEINE	Tissue Culture	--	--		
6	NARCEINE	Gum	--	--		
6	NARCOTINE	Latex Exudate	10000	70000		
6	NARCOTINE	Plant	--	14		
6	NARCOTINE	Fruit	--	200		
6	NARCOTINE	Resin, Exudate, Sap	--	60000		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	NARCOTINE	Gum	--	62500		
6	NARCOTINE	Shoot	--	--		
6	NARCOTINE	Seed	0.8	2300		
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	
2	NOSCAPINE	Latex Exudate	40000	60000		
2	NOSCAPINE	Resin, Exudate, Sap	--	--		
2	NOSCAPINE	Plant	--	--		
2	NOSCAPINE	Gum	--	--		
18	OLEIC-ACID	Seed	56230	71872	-0.3882701720005955	
18	OLEIC-ACID	Seed Oil	--	--		
18	OLEIC-ACID	Latex Exudate	--	--		
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.
25	P-COUMARIC-ACID	Pericarp	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Seed	38630	46620	0.26232081926786494	
13	PALMITIC-ACID	Latex Exudate	--	--		
13	PALMITIC-ACID	Seed Oil	--	--		
2	PALMITOLEIC-ACID	Seed	1300	1394	-0.26500524295328565	
2	PALMITOLEIC-ACID	Seed Oil	--	--		
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	--	--		
24	PECTIN	Latex Exudate	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	PHENYLALANINE	Seed	8820	9461	-0.24832088153969623	
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	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PHYTOSTEROLS	Seed	890	955	-0.3885675277621441	
14	POTASSIUM	Seed	5250	8179	-0.38616474942864093	
24	PROTOPINE	Fruit	--	--		
24	PROTOPINE	Tissue Culture	--	--		
1	PYRROLIDINE	Latex Exudate	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
10	RETICULINE	Plant	--	--		
10	RETICULINE	Fruit	--	--		
10	RETICULINE	Latex Exudate	--	--		
3	RHOEADINE	Plant	--	--		
3	RHOEADINE	Fruit	--	--		
15	RIBOFLAVIN	Seed	1.6	1.93	-0.6109902953396645	
7	SALICYLATES	Seed	--	--	-0.3401776874861938	
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	--	--		
1	SERINE	Seed	9870	10588	0.002624156751364612	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	SINAPIC-ACID	Pericarp	--	--		
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	
8	STEARIC-ACID	Seed Oil	--	--		
8	STEARIC-ACID	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.)
7	SUCCINIC-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.
9	TETRAHYDROPALMATINE	Plant	--	--		
7	THEBAINE	Latex Exudate	1000	25000		
7	THEBAINE	Fruit	--	7800		
7	THEBAINE	Resin, Exudate, Sap	--	17300		
7	THEBAINE	Gum	--	22500		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	--	--		
31	THIAMIN	Seed	7.8	9.9	0.7911069322871558	
4	THREONINE	Seed	9050	9708	0.35132307430924015	
29	TRYPTOPHAN	Seed	2550	2735	-0.20124145083987593	
8	TYROSINE	Seed	6810	7305	-0.10104412588518938	
3	VALINE	Seed	12870	13806	0.2210059089928253	
24	VANILLIC-ACID	Pericarp	--	--		
77	ZINC	Seed	24	130	2.4094178972857168	