

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

**Chemicals found in *Salvia officinalis***

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
17	THUJONE	Essential Oil	451300.0	531000.0	1.0	--
6	ALPHA-THUJONE	Leaf Essent. Oil	200000.0	363300.0		--
5	BETA-THUJONE	Leaf Essent. Oil	174000.0	356000.0		--
41	CAMPHOR	Essential Oil	76000.0	305000.0	0.54343127227621	--
6	ALPHA-THUJONE	Essential Oil	73300.0	408500.0		--
5	BETA-THUJONE	Essential Oil	52300.0	142500.0		--
41	CAMPHOR	Leaf Essent. Oil	44000.0	458000.0	2.005169580755753	--
28	ALPHA-PINENE	Leaf Essent. Oil	35000.0	55000.0	-0.4505855480163243	--
9	CAMPHENE	Essential Oil	30200.0	60700.0	1.1306904837156095	--
57	ROSMARINIC-ACID	Plant	30000.0	50600.0	1.3515537858959146	--
57	ROSMARINIC-ACID	Inflorescence	30000.0	42000.0	0.25850024578765574	--
9	CAMPHENE	Leaf Essent. Oil	28000.0	66400.0	1.484566818920243	--
13	BETA-PINENE	Leaf Essent. Oil	21000.0	55000.0	1.622889330955553	--
35	TANNIN	Plant	20000.0	80000.0	-0.053082229266390064	--
35	BORNEOL	Essential Oil	19700.0	156000.0	0.627691236095563	--
35	BORNEOL	Leaf Essent. Oil	16000.0	250000.0	2.73359024149356	--
28	ALPHA-PINENE	Essential Oil	11700.0	40100.0	-0.2072109908720455	--
13	BETA-PINENE	Essential Oil	11300.0	26100.0	-0.15085215632839455	--
14	POTASSIUM	Plant	10700.0	11630.0	-0.7090536999047472	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
60	LIMONENE	Leaf Essent. Oil	10000.0	36400.0	-0.517322999711508	--
22	MYRCENE	Leaf Essent. Oil	9000.0	15700.0	-0.3056695322092534	--
16	P-CYMENE	Leaf Essent. Oil	7000.0	17700.0	-0.5156620336360256	--
60	LIMONENE	Essential Oil	6600.0	85000.0	-0.2478161403169539	--
53	LINALOOL	Leaf Essent. Oil	4000.0	46600.0	-0.40077393425160296	--
14	POTASSIUM	Leaf	3878.0	24700.0	-0.24922981870565544	--
22	MYRCENE	Essential Oil	3700.0	10400.0	-0.3077036496607786	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Essential Oil	3100.0	5400.0	-0.5888102139189108	--
17	THUJONE	Plant	2500.0	13000.0	1.9856348958487122	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
57	ROSMARINIC-ACID	Shoot	2000.0	5800.0	-0.5832582116490932	--
23	TERPINEN-4-OL	Leaf Essent. Oil	2000.0	3000.0	-0.523716551964413	--
53	LINALOOL	Essential Oil	1700.0	5000.0	-0.560725569158283	--
28	CALCIUM	Leaf	1696.0	10800.0	-0.5218305708813075	--
17	THUJONE	Leaf	1453.0	12636.0	1.4138087279087124	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
89	URSOLIC-ACID	Leaf	1255.0	1300.0	-0.38650833417091646	--
2	MANOOL	Shoot	556.0	1478.0		--
65	MAGNESIUM	Leaf	444.0	2830.0	-0.5003307709599559	--
12	PINENE	Leaf	420.0	2352.0	-0.35113562909022744	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
67	1,8-CINEOLE	Plant	390.0	6288.0	1.2033227605211898	--
4	PHOSPHORUS	Leaf	201.0	1280.0	-0.6791795625313858	--
5	BETA-THUJONE	Leaf	200.0	9968.0	2.7606909658238585	--
6	ALPHA-THUJONE	Leaf	200.0	10172.0	2.575761084269138	--
1	SODIUM	Leaf	170.0	1080.0	-0.4554694713688264	--
64	OLEANOLIC-ACID	Leaf	140.0	786.0	-0.36135857674665767	--
2	ALPHA-HUMULENE	Leaf	110.0	616.0	0.5782902434464878	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
4	PHELLANDRENE	Leaf	100.0	560.0	-0.35918289789876834	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	SABINOL	Leaf	85.0	476.0	0.31621378249351945	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
112	ASCORBIC-ACID	Leaf	55.0	350.0	-0.4114445568899699	--
8	CARYOPHYLLENE-OXIDE	Plant	55.0	308.0	0.16441757054150238	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
60	LIMONENE	Plant	39.0	2380.0	0.9769131249982739	--
4	BORON	Leaf	25.0	41.0	-0.5517818218876644	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).
9	CAMPHENE	Leaf	20.0	18592.0	6.834837822452428	--
13	BETA-PINENE	Plant	20.0	1540.0	1.2273041399455444	--
5	ALUMINUM	Leaf	18.0	115.0	-0.6571553869693828	--
16	P-CYMENE	Shoot	15.0	495.0	-0.10900236438234769	--
11	GAMMA-TERPINENE	Leaf	15.0	140.0	-0.1019870841807531	--
1	SODIUM	Plant	11.0	12.0	-0.30341378566295807	Father Nature's Farmacy: The aggregate of all these three-letter citations.
5	SABINENE	Leaf	10.0	56.0	-0.22552904691038753	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
23	TERPINEN-4-OL	Leaf	10.0	1120.0	0.29918716656064637	--
13	ALPHA-TERPINENE	Leaf	10.0	56.0	-0.2834251845983478	--
39	NIACIN	Leaf	10.0	62.0	-0.4318167758906651	--
28	ALPHA-PINENE	Plant	7.0	1540.0	0.6083638735756228	--
2	METHYL-ISOVALERATE	Plant	7.0	42.0		--
31	THIAMIN	Leaf	7.0	8.0	-0.06349209547044472	Father Nature's Farmacy: The aggregate of all these three-letter citations.
12	COPPER	Leaf	7.0	8.0	-0.540960423661207	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	BETA-CAROTENE	Leaf	6.0	39.0	-0.9680962342519674	--
12	BORNYL-ACETATE	Shoot	5.0	1780.0	2.5481701537732313	--
47	BETA-SITOSTEROL	Leaf	5.0	2449.0	0.24430946587626218	--
23	ALPHA-TERPINEOL	Leaf	5.0	910.0	1.0071602347564552	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	BETA-PHELLANDRENE	Leaf	5.0	28.0	-0.39745256523265804	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
12	STIGMASTEROL	Leaf	5.0	230.0	1.7806618408085848	--
6	IRON	Leaf	2.4	15.0	-0.8825570778618611	--
9	DELTA-CADINENE	Plant	2.0	14.0	-0.4659017963716953	--
4	TIN	Leaf	1.3	8.0	-0.9124295958448216	--
31	CARYOPHYLLENE	Leaf	1.0	1430.0	0.1300669724943753	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
77	ZINC	Leaf	1.0	5.9	-0.4905596892021207	--
15	RIBOFLAVIN	Leaf	0.6	3.6	-0.16098657500422545	--
14	MANGANESE	Leaf	0.5	3.0	-0.4548985090553243	--
4	SILICON	Leaf	0.5	3.1	-0.40397146474890056	--
24	CHROMIUM	Leaf	0.1	0.3	-0.621193465203015	--
7	ISOBORNEOL	Shoot	0.0	784.0	1.1758265637832626	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
22	MYRCENE	Plant	0.0	336.0	-0.10695418064014987	--
41	CAMPHOR	Leaf	0.0	9324.0	-0.03988163889064865	--
53	LINALOOL	Plant	0.0	3500.0	-0.1908197582561713	--
7	LINALYL-ACETATE	Plant	0.0	6048.0	2.330313404492723	--
7	FUMARIC-ACID	Plant				--
63	MENTHOL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
41	CAMPHOR	Pericarp Essent. Oil		229000.0		--
7	CHRYSOERIOL	Plant				Stitt, Paul. Why George should eat broccoli.
89	URSOLIC-ACID	Stem		200.0	-0.8584003823146588	--
47	BETA-SITOSTEROL	Fruit Essent. Oil				--
4	NEPETIN	Plant				--
13	ALPHA-TERPINENE	Et		1000.0		--
12	STIGMASTEROL	Fruit Essent. Oil				--
1	ISOCARYOPHYLLENE	Plant				--
35	BORNEOL	Et		79000.0		--
4	PHELLANDRENE	Essential Oil		20000.0		--
102	CAFFEIC-ACID	Shoot				--
8	STEARIC-ACID	Seed				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	CHOLESTEROL	Fruit Essent. Oil				--
15	FIBER	Leaf		87000.0	-0.9217097607872751	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
63	MENTHOL	Leaf				--
9	BETA-AMYRIN	Plant				--
9	CAMPHENE	Et		47000.0		--
1	ISOROSMANOL	Shoot		57.0		--
11	ALPHA-PHELLANDRENE	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
24	PECTIN	Shoot				--
13	BETA-PINENE	Et		18000.0		--
1	VIRIDIFLOROL	Essential Oil				--
13	ALPHA-TERPINENE	Leaf Essent. Oil		2000.0	-0.5761001164044018	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Fruit Essent. Oil				--
13	PALMITIC-ACID	Fruit Essent. Oil				--
77	CHLOROGENIC-ACID	Inflorescence				--
61	FERULIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
43	CATECHIN	Plant				--
9	BETA-AMYRIN	Leaf		1000.0		--
1	CHOLESTEROL	Fruit				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
8	TYROSINE	Plant				Stitt, Paul. Why George should eat broccoli.
7	ISOBORNEOL	Essential Oil		3800.0		--
11	PANTOTHENIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
89	URSOLIC-ACID	Root				--
6	MASLINIC-ACID	Leaf		46.0	-0.8872714302780136	--
13	ALPHA-TERPINENE	Essential Oil		11200.0	-0.4634179308976379	--
5	SABINENE	Leaf Essent. Oil		2000.0	-0.6066700271910461	--
16	P-CYMENE	Et		11000.0	-1.0	--
8	CARYOPHYLLENE-OXIDE	Essential Oil		13100.0		--
17	FARNESOL	Plant				--
2	MANOOL	Essential Oil				--
2	ASPARAGINE	Plant				--
77	CHLOROGENIC-ACID	Shoot				--
7	ISOBORNEOL	Leaf Essent. Oil		28000.0	-1.0	--
3	ALPHA-CEDRENE	Plant				Stitt, Paul. Why George should eat broccoli.
13	PALMITIC-ACID	Seed				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	TRANS-PINOCARVEOL	Leaf Essent. Oil				--
5	SABINENE	Essential Oil		1200.0	-0.5875917391877868	--
7	HISPIDULIN	Leaf				--
101	APIGENIN	Shoot				--
13	BETULIN	Leaf		15.0	-0.47962706385165327	--
31	CARYOPHYLLENE	Essential Oil		33000.0	-0.14865660979366116	--
28	ALPHA-PINENE	Et		35000.0	1.0	--
13	DIOSMETIN	Plant				Stitt, Paul. Why George should eat broccoli.
78	LUTEOLIN	Leaf				--
5	ROSMANOL	Plant				Stitt, Paul. Why George should eat broccoli.
2	CAMPESTEROL	Fruit Essent. Oil				--
71	THYMOL	Essential Oil				--
2	HUMULENE	Essential Oil		17900.0	-1.0	--
10	ALPHA-AMYRIN	Plant				--
3	BETA-PHELLANDRENE	Leaf Essent. Oil		1000.0	-0.8347075553554938	--
71	THYMOL	Leaf				--
15	MALIC-ACID	Plant				--
57	ROSMARINIC-ACID	Leaf				--
12	GLYCINE	Plant				Stitt, Paul. Why George should eat broccoli.
51	ELLAGIC-ACID	Plant				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
1	SERINE	Plant				Stitt, Paul. Why George should eat broccoli.
20	CARNOSOL	Resin, Exudate, Sap		36000.0		--
27	LINOLEIC-ACID	Fruit Essent. Oil				--
3	AROMADENDRENE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
102	CAFFEIC-ACID	Inflorescence				--
2	HUMULENE	Leaf Essent. Oil				--
10	ALPHA-AMYRIN	Leaf		1800.0		--
25	P-COUMARIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
2	BETA-MYRCENE	Essential Oil				--
17	THUJONE	Et		457000.0		--
11	ALPHA-PHELLANDRENE	Essential Oil				--
7	CARNOSOLIC-ACID	Leaf		2100.0		--
5	GLUTAMINE	Plant				--
18	OLEIC-ACID	Fruit Essent. Oil				--
6	BETA-SITOSTEROL-D-GLUCOSIDE	Seed				--
60	SELENIUM	Leaf				--
20	CARNOSOL	Shoot		34.0	-0.9354703756918734	--
35	BORNEOL	Shoot		7000.0	6.370019299829522	--
53	LINALOOL	Et		11000.0		--
101	APIGENIN	Plant				Stitt, Paul. Why George should eat broccoli.
9	TERPINOLENE	Plant		112.0	0.2506839298132136	--
11	GAMMA-TERPINENE	Et		4000.0		--
3	ALANINE	Plant				Stitt, Paul. Why George should eat broccoli.
9	OXALIC-ACID	Plant				--
7	LUTEOLIN-7-GLUCOSIDE	Plant				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	ALPHA-HUMULENE	Et		21000.0		--
20	CARNOSOL	Plant				--
35	GERANIOL	Plant				Stitt, Paul. Why George should eat broccoli.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PHYTOSTEROLS	Leaf		2440.0	0.0028854038801737	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	MYRTENOL	Leaf Essent. Oil		2000.0		--
47	BETA-SITOSTEROL	Stem		1214.0	1.0861956164972184	--
3	SALVIOL	Essential Oil				--
2	CARNOSIC-ACID	Resin, Exudate, Sap		57000.0		--
57	ROSMARINIC-ACID	Tissue Culture				--
2	COBALT	Leaf				--
5	BETA-THUJONE	Et		151000.0		--
11	GAMMA-TERPINENE	Leaf Essent. Oil		3000.0	-0.6853547696905973	--
18	OLEIC-ACID	Seed		35500.0	-0.6872693677072723	--
6	ALPHA-THUJONE	Et		206000.0		--
9	TERPINOLENE	Leaf Essent. Oil		2000.0	-0.5940205732207128	--
78	LUTEOLIN	Shoot				--
2	ALPHA-HUMULENE	Essential Oil		19300.0	-0.306582227205239	--
20	CARNOSOL	Leaf		1660.0	-0.5296891454855135	--
18	TERPINEOL	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	GENKWANIN	Leaf				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	CAMPESTEROL	Leaf		120.0	-0.2035509596292973	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
22	MYRCENE	Et		8000.0	-1.0	--
3	SALVIN-MONOMETHYL-ETHER	Leaf				--
2	CARNOSIC-ACID	Shoot		35.0	-0.666399572485972	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	ROSMANOL-9-ETHYL-ETHER	Shoot		144.0		--
53	CITRAL	Plant				Stitt, Paul. Why George should eat broccoli.
1	VIRIDIFLOROL	Leaf				--
2	POMOLIC-ACID	Leaf		3.0	-1.0	--
1	DELTA-CADINOL	Leaf Essent. Oil				--
2	3-ISOTHUJONE	Leaf				--
64	OLEANOLIC-ACID	Stem		400.0	1.0	--
18	TERPINEOL	Essential Oil				--
27	LINOLEIC-ACID	Seed		73000.0	-0.29236236831545726	--
2	ALPHA-HUMULENE	Leaf Essent. Oil		29000.0	0.25622083823143005	--
2	CARNOSIC-ACID	Leaf		12400.0	1.5899657743835183	--
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil				--
3	SALVIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
5	ROSMANOL	Shoot		11.0		--
3	CIRSILIOL	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
24	VANILLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
60	LIMONENE	Et		14000.0	-1.0	--
47	BETA-SITOSTEROL	Sprout Seedling				--
23	ALPHA-TERPINEOL	Leaf Essent. Oil		1000.0	-0.8444420280137835	--
3	ALPHA-CEDRENE	Leaf Essent. Oil				--
1	ROSMADIAL	Resin, Exudate, Sap		6000.0		--
2	CAMPESTEROL	Fruit				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	DELTA-CADINENE	Leaf Essent. Oil				--
62	GALLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
34	SALICYLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
5	ROSMANOL	Resin, Exudate, Sap				--
10	CIRSILINEOL	Plant				Stitt, Paul. Why George should eat broccoli.
6	UVAOL	Plant				--
47	BETA-SITOSTEROL	Root				--
23	ALPHA-TERPINEOL	Essential Oil		3700.0	-0.6091856576306849	--
23	TERPINEN-4-OL	Essential Oil		4500.0	-0.5734207195469667	--
1	LABIATIC-ACID	Leaf				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	ALPHA-CADINOL	Leaf Essent. Oil				--
12	PINENE	Essential Oil		84000.0	-1.0	--
3	CYNAROSIDE	Leaf				--