

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

**Chemicals found in *Salvia officinalis***

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CHOLESTEROL	Fruit Essent. Oil				--
35	GERANIOL	Plant				Stitt, Paul. Why George should eat broccoli.
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil				--
1	VIRIDIFLOROL	Essential Oil				--
3	SALVIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	COBALT	Leaf				--
24	VANILLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
8	STEARIC-ACID	Fruit Essent. Oil				--
63	MENTHOL	Leaf				--
78	LUTEOLIN	Shoot				--
3	ALPHA-CEDRENE	Leaf Essent. Oil				--
13	PALMITIC-ACID	Fruit Essent. Oil				--
77	CHLOROGENIC-ACID	Inflorescence				--
3	GENKWANIN	Leaf				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
89	URSOLIC-ACID	Root				--
34	SALICYLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
53	CITRAL	Plant				Stitt, Paul. Why George should eat broccoli.
6	UVAOL	Plant				--
3	ALPHA-CADINOL	Leaf Essent. Oil				--
2	3-ISOTHUJONE	Leaf				--
2	TRANS-PINOCARVEOL	Leaf Essent. Oil				--
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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	MANOOL	Essential Oil				--
8	STEARIC-ACID	Seed				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	NEPETIN	Plant				--
2	CAMPESTEROL	Fruit				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
62	GALLIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
71	THYMOL	Leaf				--
10	CIRSILINEOL	Plant				Stitt, Paul. Why George should eat broccoli.
57	ROSMARINIC-ACID	Leaf				--
24	PECTIN	Shoot				--
78	LUTEOLIN	Leaf				--
2	CAMPESTEROL	Fruit Essent. Oil				--
1	LABIATIC-ACID	Leaf				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
7	FUMARIC-ACID	Plant				--
43	CATECHIN	Plant				--
7	CHRYSOERIOL	Plant				Stitt, Paul. Why George should eat broccoli.
8	TYROSINE	Plant				Stitt, Paul. Why George should eat broccoli.
11	PANTOTHENIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
27	LINOLEIC-ACID	Fruit Essent. Oil				--
102	CAFFEIC-ACID	Inflorescence				--
2	HUMULENE	Leaf Essent. Oil				--
2	BETA-MYRCENE	Essential Oil				--
1	ISOCARYOPHYLLENE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
102	CAFFEIC-ACID	Shoot				--
9	BETA-AMYRIN	Plant				--
18	OLEIC-ACID	Fruit Essent. Oil				--
11	ALPHA-PHELLANDRENE	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
57	ROSMARINIC-ACID	Tissue Culture				--
13	PALMITIC-ACID	Seed				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
101	APIGENIN	Shoot				--
61	FERULIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
5	ROSMANOL	Plant				Stitt, Paul. Why George should eat broccoli.
71	THYMOL	Essential Oil				--
1	CHOLESTEROL	Fruit				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
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.
17	FARNESOL	Plant				--
2	ASPARAGINE	Plant				--
18	TERPINEOL	Essential Oil				--
11	ALPHA-PHELLANDRENE	Essential Oil				--
3	ALPHA-CEDRENE	Plant				Stitt, Paul. Why George should eat broccoli.
25	P-COUMARIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
77	CHLOROGENIC-ACID	Shoot				--
1	DELTA-CADINOL	Leaf Essent. Oil				--
7	HISPIDULIN	Leaf				--
60	SELENIUM	Leaf				--
13	DIOSMETIN	Plant				Stitt, Paul. Why George should eat broccoli.
10	ALPHA-AMYRIN	Plant				--
5	ROSMANOL	Resin, Exudate, Sap				--
9	OXALIC-ACID	Plant				--
47	BETA-SITOSTEROL	Sprout Seedling				--
15	MALIC-ACID	Plant				--
9	DELTA-CADINENE	Leaf Essent. Oil				--
12	GLYCINE	Plant				Stitt, Paul. Why George should eat broccoli.
3	SALVIOL	Essential Oil				--
3	AROMADENDRENE	Plant				--
18	TERPINEOL	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
47	BETA-SITOSTEROL	Root				--
3	CYNAROSIDE	Leaf				--
5	GLUTAMINE	Plant				--
6	BETA-SITOSTEROL-D-GLUCOSIDE	Seed				--
3	SALVIN-MONOMETHYL-ETHER	Leaf				--
101	APIGENIN	Plant				Stitt, Paul. Why George should eat broccoli.
1	VIRIDIFLOROL	Leaf				--
12	STIGMASTEROL	Fruit Essent. Oil				--
63	MENTHOL	Plant				--
3	ALANINE	Plant				Stitt, Paul. Why George should eat broccoli.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
47	BETA-SITOSTEROL	Fruit Essent. Oil				--
7	LUTEOLIN-7-GLUCOSIDE	Plant				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
20	CARNOSOL	Plant				--
24	CHROMIUM	Leaf	0.1	0.3	-0.621193465203015	--
14	MANGANESE	Leaf	0.5	3.0	-0.4548985090553243	--
2	POMOLIC-ACID	Leaf		3.0	-1.0	--
4	SILICON	Leaf	0.5	3.1	-0.40397146474890056	--
15	RIBOFLAVIN	Leaf	0.6	3.6	-0.16098657500422545	--
77	ZINC	Leaf	1.0	5.9	-0.4905596892021207	--
4	TIN	Leaf	1.3	8.0	-0.9124295958448216	--
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)
5	ROSMANOL	Shoot		11.0		--
1	SODIUM	Plant	11.0	12.0	-0.30341378566295807	Father Nature's Farmacy: The aggregate of all these three-letter citations.
9	DELTA-CADINENE	Plant	2.0	14.0	-0.4659017963716953	--
6	IRON	Leaf	2.4	15.0	-0.8825570778618611	--
13	BETULIN	Leaf		15.0	-0.47962706385165327	--
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.
20	CARNOSOL	Shoot		34.0	-0.9354703756918734	--
2	CARNOSIC-ACID	Shoot		35.0	-0.666399572485972	--
53	BETA-CAROTENE	Leaf	6.0	39.0	-0.9680962342519674	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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).
2	METHYL-ISOVALERATE	Plant	7.0	42.0		--
6	MASLINIC-ACID	Leaf		46.0	-0.8872714302780136	--
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.
13	ALPHA-TERPINENE	Leaf	10.0	56.0	-0.2834251845983478	--
1	ISOROSMANOL	Shoot		57.0		--
39	NIACIN	Leaf	10.0	62.0	-0.4318167758906651	--
9	TERPINOLENE	Plant		112.0	0.2506839298132136	--
5	ALUMINUM	Leaf	18.0	115.0	-0.6571553869693828	--
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.)
11	GAMMA-TERPINENE	Leaf	15.0	140.0	-0.1019870841807531	--
1	ROSMANOL-9-ETHYL-ETHER	Shoot		144.0		--
89	URSOLIC-ACID	Stem		200.0	-0.8584003823146588	--
12	STIGMASTEROL	Leaf	5.0	230.0	1.7806618408085848	--
8	CARYOPHYLLENE-OXIDE	Plant	55.0	308.0	0.16441757054150238	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Plant	0.0	336.0	-0.10695418064014987	--
112	ASCORBIC-ACID	Leaf	55.0	350.0	-0.4114445568899699	--
64	OLEANOLIC-ACID	Stem		400.0	1.0	--
5	SABINOL	Leaf	85.0	476.0	0.31621378249351945	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Shoot	15.0	495.0	-0.10900236438234769	--
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.
2	ALPHA-HUMULENE	Leaf	110.0	616.0	0.5782902434464878	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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.
64	OLEANOLIC-ACID	Leaf	140.0	786.0	-0.36135857674665767	--
23	ALPHA-TERPINEOL	Leaf	5.0	910.0	1.0071602347564552	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Et		1000.0		--
3	BETA-PHELLANDRENE	Leaf Essent. Oil		1000.0	-0.8347075553554938	--
9	BETA-AMYRIN	Leaf		1000.0		--
23	ALPHA-TERPINEOL	Leaf Essent. Oil		1000.0	-0.8444420280137835	--
1	SODIUM	Leaf	170.0	1080.0	-0.4554694713688264	--
23	TERPINEN-4-OL	Leaf	10.0	1120.0	0.29918716656064637	--
5	SABINENE	Essential Oil		1200.0	-0.5875917391877868	--
47	BETA-SITOSTEROL	Stem		1214.0	1.0861956164972184	--
4	PHOSPHORUS	Leaf	201.0	1280.0	-0.6791795625313858	--
89	URSOLIC-ACID	Leaf	1255.0	1300.0	-0.38650833417091646	--
31	CARYOPHYLENE	Leaf	1.0	1430.0	0.1300669724943753	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	MANOOL	Shoot	556.0	1478.0		--
13	BETA-PINENE	Plant	20.0	1540.0	1.2273041399455444	--
28	ALPHA-PINENE	Plant	7.0	1540.0	0.6083638735756228	--
20	CARNOSOL	Leaf		1660.0	-0.5296891454855135	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	BORNYL-ACETATE	Shoot	5.0	1780.0	2.5481701537732313	--
10	ALPHA-AMYRIN	Leaf		1800.0		--
13	ALPHA-TERPINENE	Leaf Essent. Oil		2000.0	-0.5761001164044018	--
5	SABINENE	Leaf Essent. Oil		2000.0	-0.6066700271910461	--
9	TERPINOLENE	Leaf Essent. Oil		2000.0	-0.5940205732207128	--
2	MYRTENOL	Leaf Essent. Oil		2000.0		--
7	CARNOSOLIC-ACID	Leaf		2100.0		--
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.
60	LIMONENE	Plant	39.0	2380.0	0.9769131249982739	--
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.)
47	BETA-SITOSTEROL	Leaf	5.0	2449.0	0.24430946587626218	--
65	MAGNESIUM	Leaf	444.0	2830.0	-0.5003307709599559	--
11	GAMMA-TERPINENE	Leaf Essent. Oil		3000.0	-0.6853547696905973	--
23	TERPINEN-4-OL	Leaf Essent. Oil	2000.0	3000.0	-0.523716551964413	--
53	LINALOOL	Plant	0.0	3500.0	-0.1908197582561713	--
23	ALPHA-TERPINEOL	Essential Oil		3700.0	-0.6091856576306849	--
7	ISOBORNEOL	Essential Oil		3800.0		--
11	GAMMA-TERPINENE	Et		4000.0		--
23	TERPINEN-4-OL	Essential Oil		4500.0	-0.5734207195469667	--
53	LINALOOL	Essential Oil	1700.0	5000.0	-0.560725569158283	--
16	P-CYMENE	Essential Oil	3100.0	5400.0	-0.5888102139189108	--
57	ROSMARINIC-ACID	Shoot	2000.0	5800.0	-0.5832582116490932	--
1	ROSMADIAL	Resin, Exudate, Sap		6000.0		--
7	LINALYL-ACETATE	Plant	0.0	6048.0	2.330313404492723	--



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
67	1,8-CINEOLE	Plant	390.0	6288.0	1.2033227605211898	--
35	BORNEOL	Shoot		7000.0	6.370019299829522	--
22	MYRCENE	Et		8000.0	-1.0	--
41	CAMPHOR	Leaf	0.0	9324.0	-0.03988163889064865	--
5	BETA-THUJONE	Leaf	200.0	9968.0	2.7606909658238585	--
6	ALPHA-THUJONE	Leaf	200.0	10172.0	2.575761084269138	--
22	MYRCENE	Essential Oil	3700.0	10400.0	-0.3077036496607786	--
28	CALCIUM	Leaf	1696.0	10800.0	-0.5218305708813075	--
16	P-CYMENE	Et		11000.0	-1.0	--
53	LINALOOL	Et		11000.0		--
13	ALPHA-TERPINENE	Essential Oil		11200.0	-0.4634179308976379	--
14	POTASSIUM	Plant	10700.0	11630.0	-0.7090536999047472	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	CARNOSIC-ACID	Leaf		12400.0	1.5899657743835183	--
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.
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.
8	CARYOPHYLLENE-OXIDE	Essential Oil		13100.0		--
60	LIMONENE	Et		14000.0	-1.0	--
22	MYRCENE	Leaf Essent. Oil	9000.0	15700.0	-0.3056695322092534	--
16	P-CYMENE	Leaf Essent. Oil	7000.0	17700.0	-0.5156620336360256	--
2	HUMULENE	Essential Oil		17900.0	-1.0	--
13	BETA-PINENE	Et		18000.0		--
9	CAMPHENE	Leaf	20.0	18592.0	6.834837822452428	--
2	ALPHA-HUMULENE	Essential Oil		19300.0	-0.306582227205239	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
4	PHELLANDRENE	Essential Oil		20000.0		--
2	ALPHA-HUMULENE	Et		21000.0		--
14	POTASSIUM	Leaf	3878.0	24700.0	-0.24922981870565544	--
13	BETA-PINENE	Essential Oil	11300.0	26100.0	-0.15085215632839455	--
7	ISOBORNEOL	Leaf Essent. Oil		28000.0	-1.0	--
2	ALPHA-HUMULENE	Leaf Essent. Oil		29000.0	0.25622083823143005	--
31	CARYOPHYLLENE	Essential Oil		33000.0	-0.14865660979366116	--
28	ALPHA-PINENE	Et		35000.0	1.0	--
18	OLEIC-ACID	Seed		35500.0	-0.6872693677072723	--
20	CARNOSOL	Resin, Exudate, Sap		36000.0		--
60	LIMONENE	Leaf Essent. Oil	10000.0	36400.0	-0.517322999711508	--
28	ALPHA-PINENE	Essential Oil	11700.0	40100.0	-0.2072109908720455	--
57	ROSMARINIC-ACID	Inflorescence	30000.0	42000.0	0.25850024578765574	--
53	LINALOOL	Leaf Essent. Oil	4000.0	46600.0	-0.40077393425160296	--
9	CAMPHENE	Et		47000.0		--
57	ROSMARINIC-ACID	Plant	30000.0	50600.0	1.3515537858959146	--
13	BETA-PINENE	Leaf Essent. Oil	21000.0	55000.0	1.622889330955553	--
28	ALPHA-PINENE	Leaf Essent. Oil	35000.0	55000.0	-0.4505855480163243	--
2	CARNOSIC-ACID	Resin, Exudate, Sap		57000.0		--
9	CAMPHENE	Essential Oil	30200.0	60700.0	1.1306904837156095	--
9	CAMPHENE	Leaf Essent. Oil	28000.0	66400.0	1.484566818920243	--
27	LINOLEIC-ACID	Seed		73000.0	-0.29236236831545726	--
35	BORNEOL	Et		79000.0		--
35	TANNIN	Plant	20000.0	80000.0	-0.053082229266390064	--
12	PINENE	Essential Oil		84000.0	-1.0	--
60	LIMONENE	Essential Oil	6600.0	85000.0	-0.2478161403169539	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	FIBER	Leaf		87000.0	-0.9217097607872751	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
5	BETA-THUJONE	Essential Oil	52300.0	142500.0		--
5	BETA-THUJONE	Et		151000.0		--
35	BORNEOL	Essential Oil	19700.0	156000.0	0.627691236095563	--
6	ALPHA-THUJONE	Et		206000.0		--
41	CAMPHOR	Pericarp Essent. Oil		229000.0		--
35	BORNEOL	Leaf Essent. Oil	16000.0	250000.0	2.73359024149356	--
41	CAMPHOR	Essential Oil	76000.0	305000.0	0.54343127227621	--
5	BETA-THUJONE	Leaf Essent. Oil	174000.0	356000.0		--
6	ALPHA-THUJONE	Leaf Essent. Oil	200000.0	363300.0		--
6	ALPHA-THUJONE	Essential Oil	73300.0	408500.0		--
17	THUJONE	Et		457000.0		--
41	CAMPHOR	Leaf Essent. Oil	44000.0	458000.0	2.005169580755753	--
17	THUJONE	Essential Oil	451300.0	531000.0	1.0	--