

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Pinus sylvestris*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	DELTA-3-CARENE	Root Essent. Oil	400000.0	500000.0		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
8	DELTA-3-CARENE	Resin Essent. Oil	13000.0	360000.0		--
28	ALPHA-PINENE	Leaf Essent. Oil		312000.0	0.9632438931581422	--
28	ALPHA-PINENE	Root Essent. Oil	175000.0	200000.0	1.0055904952191068	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
13	BETA-PINENE	Root Essent. Oil	175000.0	200000.0	1.6637047098912103	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	ABIETIC-ACID	Resin, Exudate, Sap		180000.0	-1.4142135623730954	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	NEOABIETIC-ACID	Resin, Exudate, Sap		180000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
35	TANNIN	Bark		169000.0	0.2441891045370524	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
23	ALPHA-TERPINEOL	Leaf Essent. Oil	6500.0	167000.0	2.509529498910562	--
12	ESTRAGOLE	Resin, Exudate, Sap		106670.0		--
5	DEHYDROABIETIC-ACID	Resin, Exudate, Sap		70000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	BETA-PINENE	Leaf Essent. Oil		65000.0	2.10395512758855	--
35	BORNEOL	Leaf Essent. Oil	6500.0	62000.0	0.16251562096096972	--
9	CAMPHENE	Leaf Essent. Oil		35000.0	0.3677628391862796	--
13	ALPHA-TERPINENE	Leaf Essent. Oil		34500.0	2.2661395470708254	--
22	MYRCENE	Leaf Essent. Oil		34500.0	-0.23247237005406013	--
9	TERPINOLENE	Leaf Essent. Oil		26000.0	1.7189798888776386	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Leaf		25000.0	0.31537077862545454	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	DELTA-CADINENE	Leaf Essent. Oil		22300.0	--	--
7	GLUCOSE	Leaf		22000.0	-0.42788248580564037	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINITOL	Leaf		20000.0	1.0	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALPHA-CADINOL	Leaf Essent. Oil		19000.0	-1.0	--
14	SUCROSE	Leaf		17000.0	-0.4419983985239393	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	BETA-PHELLANDRENE	Leaf Essent. Oil		13000.0	0.1553903686246635	--
1	DELTA-CADINOL	Leaf Essent. Oil		9100.0		--
1	RAFFINOSE	Leaf		8000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINOSYLVIN	Wood	2500.0	8000.0		--
11	GAMMA-TERPINENE	Leaf Essent. Oil		5000.0	-0.6592175679045217	--
2	ALPHA-HUMULENE	Leaf Essent. Oil		4600.0	-0.5601171534351933	--
5	SABINENE	Leaf Essent. Oil		4500.0	-0.5646050792348103	--
20	CHOLINE	Flower		3400.0	0.43193421279068084	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
112	ASCORBIC-ACID	Leaf		3000.0	-0.16555832480808047	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Leaf	600.0	2500.0	-0.062233154531755666	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	P-CYMENE	Leaf Essent. Oil		1600.0	-0.7549604300774599	--
13	BETA-PINENE	Leaf	200.0	1500.0	1.7833577159120335	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	XYLOSE	Leaf		200.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	BORNYL-ACETATE	Leaf	60.0	175.0	-0.314398718058706	--
1	GALACTOSE	Leaf		30.0	-1.0	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	HUMULENE	Essential Oil				--
9	DELTA-CADINENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	TERPINOLENE	Flower				--
11	ADENINE	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	CAMPHENE	Resin, Exudate, Sap				--
22	MYRCENE	Flower				--
5	SABINENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
7	INDOLE-3-ACETIC-ACID	Shoot				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	PINITOL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	DELTA-CADINENE	Essential Oil				--
1	CAPROIC-ACID	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
2	GAMMA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
35	BORNEOL	Essential Oil				--
53	BETA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ALPHA-CADINOL	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	PECTOLINARIN	Leaf				--
1	GLUCOSAMINE	Shoot				--
3	BETA-PHELLANDRENE	Twig				--
9	TERPINOLENE	Essential Oil				--
35	BORNEOL	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
22	MYRCENE	Essential Oil				--
26	PHENOL	Wood				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	DEHYDROABIETIC-ACID	Shoot				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CAPRIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	ALPHA-TERPINENE	Leaf				--
1	RHODOXANTHIN	Leaf				--
19	ACETYL-CHOLINE	Sprout Seedling				--
13	PALMITIC-ACID	Pollen Or Spore				--
3	BETA-PHELLANDRENE	Flower				--
9	TERPINOLENE	Resin, Exudate, Sap				--
67	1,8-CINEOLE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	RAFFINOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	GINNOL	Pollen Or Spore				--
2	NEOXANTHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	DEHYDROABIETANE	Wood				--
2	CAMPESTEROL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Twig				--
6	QUERCIMERITRIN	Leaf				--
6	FURFURAL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	BETA-TERPINEOL	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ANISALDEHYDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ABIETIC-ACID	Shoot				--
5	P-METHOXY-CINNAMIC-ACID	Pollen Or Spore				--
3	BETA-PHELLANDRENE	Essential Oil				--
30	(+)-CATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	VIOLAXANTHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	MALTOSE	Plant				--
1	QUINIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Resin, Exudate, Sap				--
20	CITRONELLAL	Leaf Essent. Oil				--
6	BUTYRIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Plant				--
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Leaf				--
47	BETA-SITOSTEROL	Pollen Or Spore				--
1	ANDROSTENEDIONE	Pollen Or Spore				--
7	(+)-GALLOCATECHIN	Leaf				--
13	P-HYDROXY-BENZOIC-ACID	Bark				--
3	DEHYDROABIETANE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	TERPINEN-4-OL	Leaf Essent. Oil				--
24	VANILLIC-ACID	Bark				--
1	LINARIN	Leaf				--
176	QUERCETIN	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Essential Oil				--
1	N-NONACOSANE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
77	CHLOROGENIC-ACID	Leaf				--
28	ALPHA-PINENE	Flower				--
176	QUERCETIN	Leaf				--
8	FRUCTOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Shoot				--
13	ALPHA-TERPINENE	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
30	(+)-CATECHIN	Bark				--
3	P-HYDROXYACETOPHENONE	Leaf				--
2	BETA-MYRCENE	Resin, Exudate, Sap				--
23	TERPINEN-4-OL	Essential Oil				--
9	VALERIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
60	LIMONENE	Shoot				--
43	PROTOCATECHUIC-ACID	Bark				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	D-LIMONENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
1	MALONIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
31	CARYOPHYLENE	Leaf Essent. Oil				--
47	BETA-SITOSTEROL	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Essential Oil				--
1	PRODELPHINIDIN	Leaf				--
61	FERULIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Plant				--
28	ALPHA-PINENE	Resin, Exudate, Sap				--
30	(+)-CATECHIN	Leaf				--
5	BETA-ELEMENE	Essential Oil				--
17	TAXIFOLIN	Leaf				--
11	TESTOSTERONE	Pollen Or Spore				--
60	LIMONENE	Flower				--
2	PROPIONALDEHYDE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	FENCHONE	Leaf Essent. Oil				--
10	CUMINALDEHYDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	LUTEIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
41	CAMPHOR	Leaf Essent. Oil				--
13	BETA-PINENE	Resin, Exudate, Sap				--
1	PROCYANIDIN-C-2	Leaf				--
5	EUGENOL-METHYL-ETHER	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
3	BETA-SELINENE	Wood				--
38	(-)-EPICATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
16	P-CYMENE	Resin, Exudate, Sap				--
14	SULFUR	Leaf				--
18	TERPINEOL	Root				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
60	LIMONENE	Essential Oil				--
5	PINOSYLVIN	Wood				--
12	ESTRAGOLE	Leaf Essent. Oil				--
1	COPAENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	BENZOIC-ACID	Leaf				--
2	L-LIMONENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
11	ALPHA-PHELLANDRENE	Essential Oil				--
1	PROCYANIDIN-B-6	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	ESTRAGOLE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
13	BETA-PINENE	Twig				--
60	LIMONENE	Resin, Exudate, Sap				--
25	P-COUMARIC-ACID	Pollen Or Spore				--
12	STIGMASTEROL	Plant				--
60	LIMONENE	Leaf Essent. Oil				--
53	CITRAL	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
36	ANETHOLE	Leaf Essent. Oil				--
2	ISOPIMARIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
9	CAMPHENE	Essential Oil				--
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil				--
2	PROCYANIDIN-B-3	Leaf				--
14	SUCROSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	DIPENTENE	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	BETA-PINENE	Flower				--
11	ALPHA-PHELLANDRENE	Leaf				Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
40	EPICATECHIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	NEOABIETIC-ACID	Shoot				--
2	ISOPIMARIC-ACID	Shoot				--
9	PINOCEMBRIN	Wood				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	STACHYOSE	Plant				--
2	CAMPESTEROL	Plant				--
3	BETA-PHELLANDRENE	Resin, Exudate, Sap				--
1	PROCYANIDIN-B-1	Leaf				--
3	DIHYDROQUERCETIN	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	BETA-PINENE	Essential Oil				--
1	YLANGENE	Essential Oil				--
7	ALPHA-CAROTENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
31	CARYOPHYLLENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
22	MYRCENE	Twig				--
14	SHIKIMIC-ACID	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	INDOLE-3-ACETIC-ACID	Sprout Seedling				--
10	CHAMAZULENE	Leaf				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
13	ALPHA-TERPINENE	Essential Oil				--
5	SABINENE	Essential Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	GLUCOSE	Bark				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
102	CAFFEIC-ACID	Leaf				--
2	BETA-MYRCENE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	PINOSYLVIN	Shoot				--