

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Angelica archangelica*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DEHYDRODEOXYANGELICAN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
4	BETA-AMYRIN-ACETATE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BYAKANGELICIN-2'-O-ISOVALERATE	Root		2.0		--
0	5-METHOXY-GAMMA-HYDROXYPSORALEN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
14	SUCROSE	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
2	ALPHA-AMYRIN-ACETATE	Fruit		26.0		--
13	ALPHA-TERPINENE	Root Essent. Oil				--
31	PSORALEN	Fruit		310.0	-0.3807181031466607	--
0	ISOBERGAPTEN	Root Essent. Oil		88000.0		--
0	NONAN-2-ONE	Root Essent. Oil				--
5	XANTHOTOXOL	Fruit				--
2	ELEMOL	Root Essent. Oil				--
0	ANGELICAIN	Plant				--
5	BETA-ELEMENE	Root Essent. Oil				--
0	1,1-DIETHOXYHEXANE	Root				--
0	GAMMA-MUUROLENE	Root Essent. Oil				--
0	TRANS-PIPERITOL	Root Essent. Oil				--
0	ALPHA-MUUROLENE	Root Essent. Oil				--
0	P-MENTH-TRANS-2-EN-1-OL	Root Essent. Oil				--
15	MALIC-ACID	Plant				--
0	HEPTADECAN-1-OL-ACETATE	Root				--
53	LINALOOL	Root Essent. Oil				--
8	TYROSINE	Leaf				--
0	TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-HERACLLENOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ETHYL-STEARATE	Root				--
0	O-CYMENE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	CIS-1-ETHOXY-2-P-MENTHENE	Root		16.0		--
7	PHENYLALANINE	Leaf				--
0	OSTHENOL	Shoot				--
0	ISOAMYL-ISOVALERATE	Root		2.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	QUINIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BETA-SITOSTEROL-PALMITATE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	CRYPTONE	Root Essent. Oil				--
2	ARCHANGELICIN	Shoot				--
47	BETA-SITOSTEROL	Fruit				--
12	STIGMASTEROL	Fruit				--
0	DEHYDROASCORBIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	DIPRENYL-NARINGENIN	Root				Wealth of India.
5	BYAKANGELICIN	Root		13.0		--
0	5,7-DIHYDROXY-2-METHYL-CHROMONE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
3	ALANINE	Leaf				--
13	ALPHA-TERPINENE	Fruit				--
7	PIMPINELLIN	Fruit				--
0	ISOAMYL-ISOVALERATE	Root Essent. Oil				--
0	NONAN-1-AL	Root Essent. Oil				--
43	XANTHOTOXIN	Shoot				--
0	EICOSENOIC-ACID	Fruit				--
1	ANGELIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-CARYOPHYLLENE	Seed				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
0	BETA-COPAENE	Root Essent. Oil				--
0	ETHYL-PENTADECANOATE	Root Essent. Oil				--
0	TRANS-PINOCARVEOL-ACETATE	Root Essent. Oil				--
0	8-HYDROXY-5-METHOXY-PSORALEN	Fruit		62.0		--
0	P-MENTH-CIS-2-EN-1-OL	Root Essent. Oil				--
35	BORNEOL	Root				Pakistan Encyclopedia Planta Medica. 1986.
0	M-CYMEN-8-OL	Root		9.0		--
0	TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-BYAKANGELICIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ETHYL-PENTADECANOATE	Root				--
77	CHLOROGENIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	P-CYMENE-8-OL	Root Essent. Oil				--
0	OSTHENOL	Fruit				--
2	TRIDECANOIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ISELIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
31	PSORALEN	Plant				--
47	BETA-SITOSTEROL	Plant				--
0	CIS-CARVEOL-ACETATE	Root Essent. Oil				--
2	ARCHANGELICIN	Fruit				--
3	BETA-SELINENE	Root				--
0	STEARIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
1	BEHENIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BORNEOL-ISOVALERATE	Root Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-ETHOXY-1-P-MENTHENE	Root		3.0		--
0	7-ISOPROPYL-5-METHYL-BICYCLO(2.2.2)-OCT-5-EN-2-ONE	Root Essent. Oil		100.0		--
28	ALPHA-PINENE	Fruit				--
0	PETROSELINIC-ACID	Seed		427000.0	-0.4900561802158002	--
25	IMPERATORIN	Shoot				--
6	MYRISTIC-ACID	Fruit				--
43	XANTHOTOXIN	Plant				--
2	OXYPEUCEDANIN-HYDRATE	Plant				--
26	BERGAPTEN	Root				--
0	BETA-CEDRENE	Root				--
1	ETHYL-MYRISTATE	Root Essent. Oil				--
0	TRANS-OCIMENE	Root Essent. Oil				--
10	5-METHOXY-PSORALEN	Fruit				--
0	OXYPEUCIDANIN-METHANOLATE	Root				--
20	ALPHA-BISABOLOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
2	LUPEOL-ACETATE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
1	ETHYL-PALMITATE	Root		10.0		--
0	CAMPESIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	DIHYDROEUDESMOL	Root				--
0	ANGALCIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
16	P-CYMENE	Root Essent. Oil				--
0	OSTHENOL	Root		115.0		--
0	EICOSENOIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	METHYL-ETHYL-ACETIC-ACID	Root				--
0	CIS-BETA-FARNESENE	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	ALPHA-AMYRIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
5	XANTHOTOXOL	Plant				--
0	ARACHIDIC-ACID	Fruit				--
13	BETA-PINENE	Fruit				--
8	STEARIC-ACID	Fruit				--
2	ARCHANGELICIN	Plant				--
2	CONIFERIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BORNEOL-ACETATE	Root Essent. Oil				--
2	2-NONANONE	Root		1.0		--
0	4,4,6-TRIMETHYLCYCLOHEX-2-EN-1-ONE	Root				--
28	ALPHA-PINENE	Seed Essent. Oil		149000.0	0.28611774259215744	--
0	PETROSELINIC-ACID	Fruit				--
25	IMPERATORIN	Plant				--
22	MYRCENE	Fruit				--
43	XANTHOTOXIN	Fruit		42.0	1.0	--
0	TRANS-6-NITRO-1(7),2-P-MENTHADIENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GAMMA-CADINENE	Plant				--
6	OXYPEUCEDANIN	Plant				--
0	BETA-CARYOPHYLLENE	Root Essent. Oil		110000.0	1.0368391024927353	--
0	CIS-VERBENOL	Root Essent. Oil				--
0	TRANS-4-ETHOXY-THUJANE	Root Essent. Oil				--
0	12-METHYL-OMEGA-TRIDECANOLIDE	Root Essent. Oil				--
0	OXYPEUCIDANIN-HYDRATE	Root				--
0	ZOZYMIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOL	Root		1.0	-0.7415836394549143	--
1	ETHYL-OLEATE	Root				--
0	CAMPESENIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
2	PHELLOPTERIN	Root				Phytochem. Anal. 3(1):42-48. 1992
0	DELTA-ELEMENE	Root				--
0	HYDROXYPENTADECANOIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	PRANGOLARIN	Plant				--
0	DIHYDROFUROCOUMARIN-GLYCOSIDE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
1	MALONIC-ACID	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CHRYSANTHENOL-ACETATE	Root				--
0	ALPHA-ALKYL-FUROCOUMARIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
43	XANTHOTOXIN	Root				--
17	ANGELICIN	Root Essent. Oil		35000.0		--
13	BETA-PINENE	Seed Essent. Oil				--
0	SPATHULENOL	Root				--
0	O-CYMENE	Root Essent. Oil				--
0	OROSELONE	Root Essent. Oil		25000.0		--
0	HEPTADECADIENOLIDE	Root Essent. Oil		10000.0		--
0	ARCHANGELICAIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BORNEOL-ACETATE	Root				--
0	2-NITRO-1,5-P-MENTHADIENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
60	LIMONENE	Root Essent. Oil		227000.0	1.5228275750660336	--
29	TRYPTOPHAN	Leaf				--
0	1,8-CINEOL	Fruit Essent. Oil		538000.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Root Essent. Oil				--
0	PENTADECANOLIDE	Root Essent. Oil		60000.0		--
0	PRANGOLARIN	Root				--
0	NONANAL	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
25	IMPERATORIN	Fruit		66.0	1.940524885628408	--
22	MYRCENE	Seed Essent. Oil				--
2	VIOLAXANTHIN	Leaf				--
0	TRANS-4-ETHOXY-THUJANE	Root		10.0		--
6	FURFURAL	Root				Pakistan Encyclopedia Planta Medica. 1986.
9	OXALIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ARCHANGELIN	Root		2000.0		--
6	BETA-BISABOLENE	Root Essent. Oil				--
0	CIS-THUJENOL	Root				--
0	TRANS-4-ETHOXY-PIN-2-ENE	Root Essent. Oil				--
0	1,1-DIETHOXYOCTANE	Root Essent. Oil				--
0	OXYPEUCIDANIN	Root				--
1	XANTHOXYLETIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
7	LIGUSTILIDE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
7	SUCCINIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
1	ETHYL-MYRISTATE	Root				--
0	CAMPESELOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
1	OSTRUTHOL	Root		2000.0		--
9	DELTA-CADINENE	Root Essent. Oil				--
23	ALPHA-TERPINEOL	Plant				--
0	HYDROXYMYRISTIC-ACID	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	PIMPINELLIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	DIHYDROFURANOCOUMARIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
3	CEDROL	Root				--
28	ADENOSINE	Root				Pakistan Encyclopedia Planta Medica. 1986.
0	UMBELLIFEROSE	Root				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	ANGELICAIN	Root				--
13	BETA-PINENE	Root Essent. Oil				--
44	SCOPOLETIN	Root				--
0	M-CYMENE-8-OL	Root Essent. Oil				--
1	OLEIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
0	CIS-CARVYL-ACETATE	Root		2.0		--
5	GLUTAMINE	Leaf				--
0	ARCHANGELENONE	Plant				--
35	BORNEOL	Root Essent. Oil				--
0	2-DECANONE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	LIGUSTILIDE	Root				--
0	TRIDECANOLIDE	Root Essent. Oil				--
0	1,1-DIETHOXYHEXANE	Root Essent. Oil				--
0	ALPHA-PHELLANDRENE-8-OL	Root Essent. Oil				--
0	PENTADECAN-1-AL	Root Essent. Oil				--
2	OXYPEUCEDANIN-HYDRATE	Root		1500.0		--
0	HUMULENE-MONOXIDE	Root Essent. Oil				--
22	MYRCENE	Root Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	VALINE	Leaf				--
0	TRANS-4-ETHOXY-2-PINENE	Root		79.0		--
0	FURANOCOUMARIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	OSTRUTOL	Plant				--
0	CUMINYL-ALCOHOL	Root		2.0		--
0	ARCHANGELENONE	Root		50.0		--
26	BERGAPTEN	Shoot				--
0	CIS-SABINENE-HYDRATE	Root Essent. Oil				--
2	THUJOPSENE	Root				--
2	OXYPEUCEDANIN-HYDRATE	Shoot				--
5	XANTHOTOXOL	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	KVANNIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
12	STIGMASTEROL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ETHYL-LINOLENATE	Root				--
102	CAFFEIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
15	OSTHOL	Root		2000.0		--
0	DECAN-2-ONE	Root Essent. Oil				--
2	PHELLOPTERIN	Plant				--
0	DIHYDROCARVONE	Plant				--
31	CARYOPHYLLENE	Root Essent. Oil				--
1	ACONITIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
2	ALPHA-HUMULENE	Root Essent. Oil				--
3	BETA-PHELLANDRENE	Root Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
44	SCOPOLETIN	Tissue Culture				--
1	LAURIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
18	OLEIC-ACID	Seed		133000.0	0.11423787911448594	--
0	CIS-ALPHA-COPAENE-8-OL	Plant				--
0	4-METHOXY-7-HYDROXYPSORALEN	Seed				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	GERMANIUM	Root		146.0	-1.0	--
0	ARACHIDIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BISABOLOL	Root Essent. Oil				--
0	2'-BETA-D-GLUCOPYRANOSYLOXY-MARMESINE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
15	ISOPIMPINELLIN	Root Essent. Oil				--
0	TRIDECAN-1-OL	Root				--
0	PEUCENIN-7-METHYL-ETHER	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
11	ALPHA-PHELLANDRENE	Root				--
0	PENTADECAN-1-AL	Root				--
15	ISOPIMPINELLIN	Root				--
0	METHYL-ETHYL-ACETIC-ACID	Seed				--
0	HEXADECAN-1-OL	Root				--
15	LUTEIN	Leaf				--
0	UNDEC-5-EN-3-YNE	Root				--
0	TRANS-3-ETHOXY-1-P-MENTHANE	Root		4.0		--
0	FURANCHROMONE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
4	OSTHOLE	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	APTERIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
26	BERGAPTEN	Root Essent. Oil		88000.0		--
0	CIS-PIPERITOL	Root Essent. Oil				--
0	TETRADECAN-1-OL-ACETATE	Root				--
0	(+)-ALPHA-CURCUMENE	Root Essent. Oil				--
2	OXYPEUCEDANIN-HYDRATE	Fruit				--
15	ISOPIMPINELLIN	Plant				--
8	STEARIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ETHYL-LINOLEATE	Root		8.0		--
15	MALIC-ACID	Root				--
0	DECA-TRANS-2,TRANS-4-DIEN-1-AL	Root				--
0	TRANS-SABINENE-HYDRATE	Root		1.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	PETROSELINIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
2	DIACETYL	Root				Pakistan Encyclopedia Planta Medica. 1986.
25	IMPERATORIN	Root				--
0	CAR-3-ENE	Root				--
21	8-METHOXY-PSORALEN	Plant				--
0	ALPHA-COPAENE-11-OL	Root Essent. Oil				--
3	BETA-PHELLANDRENE	Fruit				--
5	SABINENE	Root Essent. Oil				--
7	LAURIC-ACID	Fruit				--
2	OCTYL-ISOVALERATE	Root Essent. Oil				--
0	CIS-6-NITRO-1(7),2-P-MENTHADIENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	GERMACRENE-D	Root Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BYAKANGELICOL	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	BISABOLENE	Root Essent. Oil				--
0	15-HYDROXYPENTADECANOIC-ACID	Root				Wealth of India.
15	ISOPIMPINELLIN	Fruit		18.0	1.0	--
0	TRANS-VERBENOL-ISOVALERATE	Root Essent. Oil				--
11	ALPHA-PHELLANDRENE	Seed Essent. Oil				--
2	PALMITOLEIC-ACID	Fruit				--
0	8-HYDROXY-5-METHOXY-PSORALEN	Seed				--
2	METHANOL	Root				--
0	HERACLENOL-2'-O-SENECIOATE	Root		1.0		--
2	LUPEOL-ACETATE	Fruit		40.0		--
0	UMBELLIPRENIN	Root				--
0	TRANS-1-ETHOXY-2-P-MENTHENE	Root		6.0		--
7	FUMARIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	OSTHENOLE	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	CONIFERIN	Root				Pakistan Encyclopedia Planta Medica. 1986.
3	CIS-OCIMENE	Root Essent. Oil				--
0	TETRADECAN-1-AL	Root				--
0	(+)-CUPARENE	Root				--
6	OXYPEUCEDANIN	Shoot				--
1	VISNAGIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
8	ISOIMPERATORIN	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	SPHONDIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
1	ETHYL-LAURATE	Root				--
8	ISOIMPERATORIN	Root				--
0	CYMENE	Root				--
26	BERGAPTEN	Plant				--
0	HEPTYL-ISOVALERATE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DELTOIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BETA-CYMOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	CAR-3-ENE	Root Essent. Oil				--
0	8-HYDROXY-5-METHOXY-PSORALEN	Plant				--
1	TIGLIC-ACID	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	ALPHA-COPAENE	Root Essent. Oil				--
2	BETA-MYRCENE	Root				--
0	ROSIFOLIOL	Root				--
8	ISOIMPERATORIN	Shoot				--
0	OCTAN-1-AL	Root Essent. Oil				--
0	(+)-OXYPEUCEDANIN	Root				--
0	TRANS-PIPERITOL	Root		30.0		--
6	FENCHONE	Root Essent. Oil				--
0	APTERIN	Root				--
1	BYAKANGELICIN-ANGELATE	Root		8.0		--
0	BICYCLOGERMACRENE	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	12-METHYL-OMEGA-TRIDECANOLIDE	Root				--
3	ISOLEUCINE	Leaf				--
0	TRANS-VERBENOL-ACETATE	Root Essent. Oil				--
2	PALMITOLEIC-ACID	Seed				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
28	ADENOSINE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil		678000.0	1.751978121762097	--
1	PALMITIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
0	MARMEZIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	HERACLENOL-2'-O-ISOVALERATE	Root		13.0		--
0	LINOLENIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
0	UMBELLIPRENIN	Fruit				--
0	TRANS-1(7),5-P-MENTHADIEN-2-YL-ACETATE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
8	FRUCTOSE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	OROSELONE	Plant				--
0	CIS-4-ETHOXY-THUJANE	Root		6.0		--
0	CIS-4-ETHOXY-THUJANE	Root Essent. Oil				--
9	TERPINOLENE	Root Essent. Oil				--
0	(+)-ALPHA-COPAENE	Seed Essent. Oil				--
6	OXYPEUCEDANIN	Fruit				--
0	ISOCOUMARIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	SEC-O-BETA-D-GLUCOPYRANOSYL-(R)-BYAKANGELICIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ETHYL-CAPRATE	Root				--
2	BISABOLANGELONE	Plant				Pakistan Encyclopedia Planta Medica. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CUPARENE	Root Essent. Oil				--
1	PENTADECANOIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
9	CAMPHENE	Fruit				--
0	5-METHYL-ANGELICIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ALPHA-COPAEN-8-OL	Root				--
0	ALPHA-THUJENE	Root Essent. Oil				--
0	QUERCETIN-GLYCOSIDE	Fruit				--
8	ISOIMPERATORIN	Fruit		4.0	-0.9645619455667129	--
0	OCTADECAN-1-OL	Root				--
0	(+)-LIMONENE	Root				--
0	HEPTADECANOLIDE	Root				--
1	2'-ANGELOYL-3'-ISOVALERYL-VAGINATE	Root				Phytochem. Anal. 3(1):42-48. 1992
0	ETHYL-CAPRATE	Root Essent. Oil				--
17	ANGELICIN	Seed				--
35	BORNEOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BETA-FARNESENE	Root Essent. Oil				--
0	1-O-BETA-D-GLUCOPYRANOSYL-(2S,3P)-3-HYDROXY-MARMESINE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	GAMMA-TERPINEOL	Root				--
0	TRANS-VERBENOL	Root Essent. Oil				--
13	PALMITIC-ACID	Seed				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
6	ACETALDEHYDE	Seed				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
11	ALPHA-PHELLANDRENE	Root Essent. Oil		225000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Fruit				--
0	MARMESININE	Plant				--
0	HEPTYL-ISOVALERATE	Root Essent. Oil				--
0	LINOLEIC-ACID-ETHYL-ESTER	Root Essent. Oil				--
22	UMBELLIFERONE	Fruit				--
0	TETRADECANAL	Root		2.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	FENCHONE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
2	OCTYL-ISOVALERATE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-SABINENE-HYDRATE	Root				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-4-ETHOXY-2-PINENE	Root		5.0		--
0	TRANS-CARVEOL-ACETATE	Root Essent. Oil				--
15	OSTHOL	Fruit				--
22	UMBELLIFERONE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ISOBERGAPTOL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
24	ETHANOL	Root				--
0	CUMINYL-ALDEHYDE	Root Essent. Oil				--
2	ALPHA-METHYL-BUTYRIC-ACID	Plant				Pakistan Encyclopedia Planta Medica. 1986.
53	LINALOOL	Root		10.0	-0.41637162119267096	--
3	ASPARTIC-ACID	Leaf				--
0	CIS-4-ETHOXY-PIN-2-ENE	Root Essent. Oil				--
0	TERPINENOL	Root Essent. Oil				--
0	PENTADECANAL	Root				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
9	CAMPHENE	Root Essent. Oil				--
10	5-METHOXY-PSORALEN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	TANNINS	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	ALPHA-CARYOPHYLLENE	Root				--
0	ALPHA-TERPINOLENE	Root				--
31	PSORALEN	Seed		100.0	-0.6857885534361138	--
0	ISOBERGAPTEN	Fruit				--
0	OCTADEC-9-EN-18-OLIDE	Root Essent. Oil		20000.0		--
5	ZEAXANTHIN	Leaf				--
7	GLUCOSE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
5	ERGOSTEROL	Fruit				--
17	ANGELICIN	Root				--
13	BETA-EUDES MOL	Root Essent. Oil				--
0	1,1-DIETHOXYOCTANE	Root				--
11	GAMMA-TERPINENE	Root Essent. Oil				--
0	TRANS-SABINENE-HYDRATE	Root Essent. Oil				--
1	8-(2-(3-METHYLBUTOXY)-3-HYDROXY-3-METHYLBUTOXY)PSORALEN	Root				Phytochem. Anal. 3(1):42-48. 1992
11	ALPHA-PHELLANDRENE	Fruit				--
13	PALMITIC-ACID	Root Essent. Oil		60000.0	-0.14585513924522536	--
0	MARMESIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	HEPTADECANOLIDE	Root Essent. Oil				--
27	LINOLEIC-ACID	Fruit				--
22	UMBELLIFERONE	Root		200.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TERT-O-BETA-D-GLUCOPYRANOSYL-(R)-ISOBYAKANGELICIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	OCTANAL	Root		1.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-3-ETHOXY-1-P-MENTHENE	Root		8.0		--
1	TRANS-CARVEOL	Root Essent. Oil				--
15	OSTHOL	Root Essent. Oil		530000.0		--
0	UMBELLIFEREN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	ISOBERGAPTIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
4	RUTAMARIN	Plant				Pakistan Encyclopedia Planta Medica. 1986.
5	ERGOSTEROL	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	BETA-SITOSTERYL-ARACHINATE	Plant				Pakistan Encyclopedia Planta Medica. 1986.
0	CUMINYL-ALCOHOL	Root Essent. Oil				--
2	ARCHANGELICIN	Root				--
2	ASPARAGINE	Leaf				--
0	BETA-THUJENE	Seed Essent. Oil		870000.0		--
23	TERPINEN-4-OL	Root Essent. Oil				--
0	EICOSANE	Root	0.0	5.0	-1.0	--
0	BETA-HIMACHALENE	Root	0.0	12.0		--
0	CIS-P-MENTH-2-EN-1-OL	Root	0.0	62.0		--
0	OCTADECANE	Root	0.0	5.0		--
0	SABINYL-ACETATE	Root	0.0	5.0		--
0	NONADECANE	Root	0.0	5.0	1.0	--
6	ZINGIBERENE	Root	0.0	5.0	-1.0	--
5	SABINOL	Root	0.0	34.0		--
1	TRANS-CARVEOL	Root	0.0	11.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
9	TERPINOLENE	Root	0.0	16.0	-1.0	--
23	TERPINEN-4-OL	Root	0.0	10.0	-0.5731321285364237	--
7	PIPERITONE	Root	0.0	3.0		--
0	LIMONENE-1,2-OXIDE	Plant	0.0	15.0		--
0	CHRYSANTHENYL-ACETATE-I	Root	0.0	7.0		--
0	PHELLANDRAL	Root	0.0	4.0		--
6	OXYPEUCEDANIN	Root	0.0	385.0	-1.0	--
13	ALPHA-TERPINENE	Root	0.0	6.0	-0.6602197185589468	--
19	CARVONE	Root	0.0	2.0	-0.7714223871650727	--
0	ALPHA-CUBEBENE	Root	0.0	5.0		--
0	BORNYL-ISOVALERATE	Root	0.0	7.0	-1.0	--
5	BETA-ELEMENE	Root	0.0	90.0	-1.0	--
3	AR-CURCUMENE	Root	0.0	6.0	-1.0	--
0	HEXADECANE	Root	0.0	7.0	0.9999999999999999	--
0	2-PENTYL-FURAN	Root	0.0	4.0	1.0	--
60	LIMONENE	Root	0.0	1320.0	1.7252265137628358	--
0	HEPTADECANE	Root	0.0	7.0		--
0	TETRADECANE	Root	0.0	2.0		--
2	ELEMOL	Root	0.0	18.0		--
23	ALPHA-TERPINEOL	Root	0.0	12.0	-0.5636245828350195	--
0	GAMMA-CARYOPHYLLENE	Root	0.0	6.0		--
0	TRANS-P-MENTH-2-EN-1-OL	Root	0.0	25.0		--
5	BETA-SESQUIPELLANDRENE	Root	0.0	7.0	-1.0	--
0	CIS-PIPERITOL	Root	0.0	8.0		--
2	OXYPEUCEDANIN-HYDRATE	Seed	0.6	3.8	-1.0	Wealth of India.
0	P-CYMEN-8-OL	Root	1.0	31.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
11	GAMMA-TERPINENE	Root	1.0	12.0	-0.802453903453894	--
0	GAMMA-MUUROLENE	Root	1.0	4.0	-1.0	--
0	12-METHYL-13-TRIDECANOLIDE	Root	1.0	12.0		--
0	ALPHA-THUJENE	Root	1.0	13.0		--
0	CHRYSANTHENYL-ACETATE-II	Root	1.0	95.0		--
0	TRANS-VERBENYL-2-METHYL-BUTYRATE	Root	1.0	4.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	BETA-EUDESOL	Root	1.0	21.0	1.0	--
0	4-METHOXY-7H-FURO(3,2-G)(1)BENZOPYRAN-7-ONE	Root	1.0	225.0		--
9	DELTA-CADINENE	Root	1.0	101.0	1.4139785716108804	--
47	BETA-SITOSTEROL	Seed	1.5	9.5	-0.627327401886418	--
2	GERMACRENE-D	Root	2.0	26.0	1.0	--
9	CAMPHENE	Root	2.0	130.0	1.4108316199577506	--
26	BERGAPTEN	Seed	2.0	6800.0	1.5453742965682007	--
0	TRANS-CARVYL-ACETATE	Root	2.0	5.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	BETA-PINENE	Root	2.0	2400.0	2.065213478268315	--
0	5-UNDECEN-3-YNE	Root	2.0	15.0		--
2	TRANS-BETA-FARNESENE	Root	2.0	10.0		--
43	XANTHOTOXIN	Seed	2.0	1900.0	-1.0	--
8	TRANS-ANETHOLE	Root	2.0	13.0		--
0	GAMMA-CADINENE	Root	2.0	14.0	1.0	--
31	PSORALEN	Root	2.0	140.0	1.2840756412696184	--
5	SABINENE	Root	2.0	95.0	0.0843149140979014	--
0	17-HEPTADECANOLIDE	Root	2.0	20.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CUPARENE	Root	3.0	10.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-VERBENOL	Root	3.0	10.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	CIS-OCIMENE	Root	4.0	125.0		--
0	UMBELLIPRENIN	Seed	4.0	57.0		--
0	BETA-FARNESENE	Root	5.0	15.0	-0.584230956900959	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-PINOCARVYL-ACETATE	Root	5.0	17.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-VERBENYL-ISOVALERATE	Root	6.0	17.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CYMEN-8-OL	Root	6.0	18.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-COPAENE-8-OL	Root	6.0	18.0		--
22	MYRCENE	Root	7.0	380.0	1.4075966148229513	--
0	BETA-COPAENE	Root	8.0	20.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	BETA-BISABOLENE	Root	8.0	72.0	-1.2022170084503725	--
31	CARYOPHYLLENE	Root	8.0	20.0	-0.6816330830044597	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	OSTRUTHOL	Seed	9.0	57.0		Wealth of India.
0	TRANS-OCIMENE	Root	10.0	268.0		--
0	ALPHA-COPAENE	Root	10.0	190.0		--
0	5-ISOPROPYLBICYCLO-(3,1,0)-HEXAN-2-ONE	Plant	10.0	30.0		--
0	ALPHA-MUUROLENE	Root	10.0	120.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PRANGOLARIN	Seed	12.0	75.0		Wealth of India.
8	ISOIMPERATORIN	Seed	12.0	75.0	1.0	Wealth of India.
0	HUMULENE-MONOXIDE	Root	13.0	40.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	15-PENTADECANOLIDE	Root	15.0	75.0		--
0	TRIDECANOLIDE	Root	15.0	45.0		--
0	13-TRIDECANOLIDE	Root	15.0	50.0		--
0	ALPHA-COPAEN-11-OL	Root	15.0	45.0		--
0	D-ALPHA-PHELLANDRENE	Root	15.0	2660.0		--
0	TRANS-VERBENYL-ACETATE	Root	15.0	46.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-PHELLANDRENE-8-OL	Root	15.0	40.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	PENTADECANOLIDE	Root	15.0	37.0		--
0	CRYPTONE	Root	16.0	50.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	ALPHA-HUMULENE	Root	18.0	50.0	1.4138559108869015	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-VERBENOL	Root	20.0	64.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
12	BORNYL-ACETATE	Root	25.0	75.0	-0.5747231818271519	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	DELTA-3-CARENE	Root	30.0	505.0	1.4140772728836788	--
28	ALPHA-PINENE	Root	35.0	5890.0	2.1989183610646146	--
16	P-CYMENE	Root	40.0	980.0	1.731986088156794	--
26	BERGAPTEN	Fruit	48.0	1300.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	7-METHOXY-8-(3-METHYL-2-BUTENYL)-2H-1-BENZOPYRAN-2-ONE	Root	50.0	2000.0		--
25	IMPERATORIN	Seed	50.0	5000.0	0.20180777184913837	--
3	BETA-PHELLANDRENE	Root	50.0	5320.0	1.0	--
0	DIHYDROCARVONE	Seed	160.0	1025.0	0.004692483254163068	--
28	ALPHA-PINENE	Seed	170.0	1500.0	-0.34027084756770226	--
16	P-CYMENE	Seed	800.0	5050.0	0.5834563158237798	Wealth of India.
0	AZULENOGENIC-HYDROCARBON	Seed	930.0	5890.0		Wealth of India.
0	EO	Root	1000.0	19000.0	0.24015740661431922	--
0	D-ALPHA-PHELLANDRENE	Seed	1140.0	7220.0	-1.0	Wealth of India.
0	EO	Seed	2000.0	38000.0	-0.07010761007370915	--
0	HEXYL-METHYL-PHTHALATE	Seed	3600.0	13680.0		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	BETA-THUJENE	Root	6900.0	8700.0		--
0	FAT	Seed	189000.0	203000.0	-0.3286177590566424	--
0	PROTEIN	Seed	319000.0	325000.0	0.8113062118868037	--