

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Echinacea purpurea

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	INULIN	Root	42670.0	170000.0	-0.5352651016442753	--
5	STARCH	Root	30120.0	120000.0	-0.818804895582863	--
0	PROTEIN	Root	23092.0	92000.0	-0.2966070707869874	--
0	GUM	Root	20080.0	80000.0	-1.0883506063091624	--
0	ASH	Root	20080.0	80000.0	0.35526479427075014	--
14	CICHORIC-ACID	Flower	12000.0	31000.0		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	RESIN	Root	5020.0	20000.0	-1.1686515095574843	--
0	FAT	Root	3263.0	13000.0	-0.3294780368795451	--
14	POTASSIUM	Root	2031.0	8090.0	-0.5629990790704673	--
0	EO	Flower	1300.0	4800.0	-0.2635198701703331	Jim Duke's personal files.
0	EO	Shoot	900.0	3200.0	-0.656845084060254	Jim Duke's personal files.
28	CALCIUM	Root	826.0	3290.0	-0.4504262877394521	--
0	3,4-EPOXY-TRIDECA-1,5-DIENE-7,9,11-TRIYNE	Root	800.0	11000.0	1.0	Jim Duke's personal files.
0	EO	Root	628.0	2500.0	-0.5370357854651269	--
65	MAGNESIUM	Root	467.0	1860.0	-0.3732958440640499	--
112	ASCORBIC-ACID	Root	212.0	843.0	-0.16407727962118843	--
0	TRIDECA-8,10,12-TRIENE-2,4,6-TRIYNE	Root	200.0	300.0	1.0	Jim Duke's personal files.
4	PHOSPHORUS	Root	198.0	790.0	-0.47928982526561387	--
5	ALUMINUM	Root	197.0	786.0	0.10925347177124488	--
14	CICHORIC-ACID	Root	123.0	21000.0		--
1	SODIUM	Root	23.0	90.0	-0.4708671369343761	--
6	IRON	Root	18.0	70.0	-0.3399578709623491	--
39	NIACIN	Root	17.0	68.0	0.5147577614900641	--
1	TUSSILAGINE	Root	15.0	60.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOTUSSILAGINE	Root	15.0	60.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
4	SILICON	Root	8.0	30.1	-0.20463462833135423	--
4	TIN	Root	4.3	17.0	0.05222691114208539	--
2	COBALT	Root	4.0	14.8	-0.2239738444132915	--
15	RIBOFLAVIN	Root	3.0	12.0	1.734423986242379	--
14	MANGANESE	Root	3.0	10.1	-0.4252699671884822	--
0	TRIDECA-TRANS-2-TRANS-6-CIS-8-TRIENE-10,12-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot	2.0	3.2		Jim Duke's personal files.
0	TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Root	1.7	12500.0	1.3010874649309312	Jim Duke's personal files.
77	ZINC	Root	1.3	5.1	-0.8355779101426338	--
0	THIAMINE	Root	0.7	2.6	-0.3397593870321354	--
53	BETA-CAROTENE	Root	0.6	2.2	-0.4223548942066434	--
60	SELENIUM	Root	0.5	2.1	-0.21306605490417255	--
24	CHROMIUM	Root	0.5	1.9	-0.18124589408844657	--
0	UNDECA-TRANS-2-CIS-4-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		5.6	-1.0	Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-8-CIS-TRIENOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Flower				Jim Duke's personal files.
0	POLYSACCHARIDE-F	Tissue Culture				Jim Duke's personal files.
0	ECHINACEA-POLYSACCHARIDE-VII-A	Root				Jim Duke's personal files.
35	BORNEOL	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-TRANS-2-CIS-7-DIENE-10,12-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot		20.0		Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GLYCINE-BETAINE	Flower		16450.0	1.0	Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-8-CIS-10-CIS-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
0	DODECA-2E,4E,8Z,10E/Z-TETRAENOIC-ACID-ISOBUTYLAMIDES	Shoot				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Flower		5000.0	1.0	Jim Duke's personal files.
0	UNDECA-TRANS-2-CIS-4-DIENE-8,10-DIYNOIC-ACID-2-METHYL-BUTYLAMIDE	Root		1.7		Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-8-CIS-10-CIS-TETRAENOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Leaf				Jim Duke's personal files.
0	POLYSACCHARIDE-E	Tissue Culture				Jim Duke's personal files.
0	ECHINACEA-FACTOR-A	Root				Jim Duke's personal files.
6	ARABINO GALACTAN	Tissue Culture				Jim Duke's personal files.
0	METHYL-P-HYDROXYCINNAMATE	Shoot				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	TRIDECA-TRANS-2-CIS-7-DIENE-10,12-DIYNOIC-ACID-(2-METHYL-BUTYL)-AMIDE	Shoot		1.2		Jim Duke's personal files.
0	4-O-METHYL-GLUCURONOARABINOXYLAN	Shoot		2600.0		Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-10-TRANS-TRIEN-8-YNOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
0	P-HYDROXYCINNAMIC-ACID-METHYL-ESTER	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	FIBER(DIETARY)	Root		512000.0	1.2403190416116665	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	UNDECA-CIS-2-TRANS-4-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		12.8	-1.0	Jim Duke's personal files.
0	CHICHORIC-ACID-DIMETHYL-ETHER	Flower				Jim Duke's personal files.
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Stem				Jim Duke's personal files.
0	POLYSACCHARIDE-A	Tissue Culture				Jim Duke's personal files.
0	DODECA-TRANS-2-TRANS-4-TRANS-10-TRIEN-8-YNOIC-ACID-ISOBUTYLAMIDE	Root		1.1		Jim Duke's personal files.
6	ARABINOGALACTAN	Shoot				Jim Duke's personal files.
28	VANILLIN	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-8,10,12-TRIENE-2,4,6-TRIYNE	Flower				Jim Duke's personal files.
0	DODECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
12	GLYCINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	2-FERULOYL-TARTARIC-ACID	Shoot		400.0		Jim Duke's personal files.
2	GERMACRENE-D	Shoot		120.0	-0.3032170149983238	--
0	FIBER(CRUDE)	Root		111000.0	-0.008159256327467447	--
0	UNDECA-CIS-2-TRANS-4-DIENE-2,4-DIYN-1-OIC-ACID-ISOBUTYLAMIDE	Root		166.7	-1.0	Jim Duke's personal files.
0	CHICHORIC-ACID-DIMETHYL-ETHER	Leaf				Jim Duke's personal files.
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Root				Jim Duke's personal files.
0	PENTADECA-TRANS-2-CIS-9-DIENE-12,14-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot		8.0		Jim Duke's personal files.
0	DODECA-TRANS-2-TRANS-4-CIS-8-TRIENOIC-ACID-ISOBUTYLAMIDE	Root		2.8		Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DODECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-2-METHYL-BUTYLAMIDE	Root				Jim Duke's personal files.
0	GERMACRENE-ALCOHOL	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	2-CAFFEOYL-TARTARIC-ACID	Shoot		1000.0		Jim Duke's personal files.
0	GERMACRANEDIOL-EPOXIDE-CINNAMIC-ACID-ESTER	Root				Jim Duke's personal files.
0	UNDECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
14	CICHORIC-ACID	Shoot				Jim Duke's personal files.
0	CHICHORIC-ACID-DIMETHYL-ETHER	Stem				Jim Duke's personal files.
0	PENTADECA-TRANS-2-CIS-9-DIENE-12,14-DIYNOIC-ACID-(2-HYDROXY-ISOBUTYL)-AMIDE	Shoot		10.0		Jim Duke's personal files.
0	DODECA-TRANS-2-TRANS-4-CIS-8-TRANS-10-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root		16.7		Jim Duke's personal files.
4	RUTOSIDE	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-2-TRANS-7-CIS-DIENE-10,12-DIYNOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
0	DODECA-2-TRANS-4-CIS-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	2-CAFFEOYL-3-FERULOYL-TARTARIC-ACID	Shoot		1600.0		Jim Duke's personal files.
0	GERMACRA-4(15)-5-TRANS-10(14)-TRIEN-1-BETA-OL	Shoot		42.1		Jim Duke's personal files.
0	UNDECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-2-METHYL-BUTYLAMIDE	Root				Jim Duke's personal files.
0	CINNAMOYL-ECHINAXANTHOL	Root		1000.0		Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CHICHORIC-ACID-DIMETHYL-ETHER	Root				Jim Duke's personal files.
0	13-HYDROXY-OCTADECACIS-9-TRANS-11-CIS-15-TRIENNOIC-ACID	Shoot				Jim Duke's personal files.
0	DODECA-TRANS-2-TRANS-4-CIS-8-CIS-10-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root		16.7		Jim Duke's personal files.
87	RUTIN	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	3,4-EPOXY-TRIDECA-1,5-DIENE-7,9,11-TRIYNE	Stem				Jim Duke's personal files.
0	DODECA-2,4,8,10-TETRAEN-1-OIC-ACID-ISOBUTYLAMIDE	Root		166.7	-1.0	Jim Duke's personal files.
0	2-CAFFEOYL-3-COUMAROYL-TARTARIC-ACID	Shoot		120.0		Jim Duke's personal files.
0	UNDECA-2-TRANS-4-CIS-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	2,3-DICAFFEOYL-TARTARIC-ACID	Shoot		3400.0		Jim Duke's personal files.
0	WATER	Root		749000.0	-0.13250827284057254	--
0	CINNAMOYL-ECHINADIOL	Root		1000.0		Jim Duke's personal files.
0	CHICHORIC-ACID	Flower				Jim Duke's personal files.
0	DODECA-TRANS-2-CIS-4-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		4.4	-0.9999999999999994	Jim Duke's personal files.
0	RHAMNOARABINO GALACTAN	Root				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
5	CYANIN	Flower				Jim Duke's personal files.
6	CARYOPHYLENE-EPOXIDE	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	UNDECA-2-CIS-4-TRANS-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	SUCROSE	Root		34000.0	-0.9160418188104167	Jim Duke's personal files.
10	ECHINACOSIDE	Root				Jim Duke's personal files.
0	CHICHORIC-ACID	Leaf				Jim Duke's personal files.
1	HETEROXYLAN	Shoot				Jim Duke's personal files.
0	DODECA-TRANS-2-CIS-4-DIENE-8,10-DIYNOIC-ACID-2-METHYL-BUTYLAMIDE	Root		2.8		Jim Duke's personal files.
0	QUERCETIN-7-GLUCOSIDE	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-1,3-DIENE-5,7,9,11-TETRAYNE	Root		100.0		Jim Duke's personal files.
12	BORNYL-ACETATE	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	ECHINACEA-PURPUREA-POLYSACCHARIDE	Shoot				Jim Duke's personal files.
0	CYANIDIN-3-O-(6-O-MALONYL-BETA-D-GLUCOPYRANOSIDE)	Flower				Jim Duke's personal files.
0	TUSSILAGIN	Plant				Jim Duke's personal files.
47	BETA-SITOSTEROL	Root				Jim Duke's personal files.
1	ECHINACIN-B	Root				Jim Duke's personal files.
0	CHICHORIC-ACID	Stem				Jim Duke's personal files.
0	GLYCINE-BETAINE	Root		4500.0	1.0	Jim Duke's personal files.
0	DODECA-CIS-2-TRANS-4-DIENE-8,10-DIYN-1-OIC-ACID-ISOBUTYLAMIDE	Root		166.7	-1.0	Jim Duke's personal files.
176	QUERCETIN	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-1-11-DIENE-3-5-7-9-TETRAYNE	Flower				Jim Duke's personal files.

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14	BETAINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	ECHINACEA-FACTOR-B	Root				Jim Duke's personal files.
25	P-COUMARIC-ACID	Fruit Juice				Jim Duke's personal files.
0	RHAMNOARABINO GALACTAN	Shoot				Jim Duke's personal files.
0	ECHINACEA-PURPUREA-POLYSACCHARIDE-I	Root				Jim Duke's personal files.
0	CHICHORIC-ACID	Root				Jim Duke's personal files.
0	GLYCINE-BETAINE	Stem		5650.0	1.0	Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-DIENOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
0	KAEMPFEROL-3-O-RUTINOSIDE	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-1-11-DIENE-3-5-7-9-TETRAYNE	Root		100.0	-0.5513525242543177	Jim Duke's personal files.
28	VANILLIN	Shoot		2.4		Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-DIENOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	CICHORIENIC-ACID	Root				Jim Duke's personal files.
0	POLYSACCHARIDE	Plant				Jim Duke's personal files.
0	ECHINACEA-POLYSACCHARIDE	Tissue Culture				Jim Duke's personal files.
14	BETAINE	Root				Jim Duke's personal files.
31	CARYOPHYLLENE	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	TRIDECA-TRANS-2-CIS-7-DIENE-10,12-DIENOIC-ACID-ISOBUTYLAMIDE	Root		4.4	-0.9999999999999998	Jim Duke's personal files.
0	GLYCINE-BETAINE	Leaf		11200.0	1.0	Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	DODECA-2-TRANS-4-TRANS-8-CIS-TRIENOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
0	TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Stem		100.0	-1.0	Jim Duke's personal files.