

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Echinacea purpurea

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DODECA-2-TRANS-4-TRANS-8-CIS-10-CIS-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root				Jim Duke's personal files.
14	CICHORIC-ACID	Root	123.0	21000.0		--
0	2-CAFFEYOYL-3-FERULOYL-TARTARIC-ACID	Shoot		1600.0		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	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.
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	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	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.
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	2-CAFFEYOYL-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	CHICHORIC-ACID-DIMETHYL-ETHER	Flower				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Stem				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.
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	ARABINO GALACTAN	Shoot				Jim Duke's personal files.
0	DODECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root				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.
0	CHICHORIC-ACID-DIMETHYL-ETHER	Leaf				Jim Duke's personal files.
0	CHICHORIC-ACID-MONOMETHYL-ETHER	Root				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.
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.
0	GERMACRANEDIOL-EPOXIDE-CINNAMIC-ACID-ESTER	Root				Jim Duke's personal files.
0	DODECA-2-TRANS-4-CIS-DIENE-8,10-DIYNOIC-ACID-2-METHYL-BUTYLAMIDE	Root				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	TUSSILAGIN	Plant				Jim Duke's personal files.
0	CHICHORIC-ACID-DIMETHYL-ETHER	Stem				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.
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.
0	DODECA-2-TRANS-4-CIS-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
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	GERMACRA-4(15)-5-TRANS-10(14)-TRIEN-1-BETA-OL	Shoot		42.1		Jim Duke's personal files.
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	CINNAMOYL-ECHINAXANTHOL	Root		1000.0		Jim Duke's personal files.
0	CHICHORIC-ACID-DIMETHYL-ETHER	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	13-HYDROXY-OCTADECA-CIS-9-TRANS-11-CIS-15-TRIENNOIC-ACID	Shoot				Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DODECA-TRANS-2-TRANS-4-CIS-8-CIS-10-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root		16.7		Jim Duke's personal files.
28	VANILLIN	Shoot		2.4		Jim Duke's personal files.
31	CARYOPHYLENE	Shoot				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	2,3-DICAFFEOYL-TARTARIC-ACID	Shoot		3400.0		Jim Duke's personal files.
0	CINNAMOYL-ECHINADIOL	Root		1000.0		Jim Duke's personal files.
0	CHICHORIC-ACID	Flower				Jim Duke's personal files.
0	ISOTUSSILAGINE	Root	15.0	60.0		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
5	CYANIN	Flower				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.
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	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	CYANIDIN-3-O-(6-O-MALONYL-BETA-D-GLUCOPYRANOSIDE)	Flower				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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ECHINACEA-PURPUREA-POLYSACCHARIDE	Shoot				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-DIENOIC-ACID-(2-METHYL-BUTYL)-AMIDE	Shoot		1.2		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	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.
25	P-COUMARIC-ACID	Fruit Juice				Jim Duke's personal files.
0	ECHINACEA-FACTOR-B	Root				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-TRIENE	Flower				Jim Duke's personal files.
0	RHAMNOARABINOGLACTAN	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	2-FERULOYL-TARTARIC-ACID	Shoot		400.0		Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-DIENOIC-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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DODECA-2-TRANS-4-TRANS-DIENOIC-ACID-ISOBUTYLAMIDE	Shoot				Jim Duke's personal files.
0	CICHORIENIC-ACID	Root				Jim Duke's personal files.
1	TUSSILAGINE	Root	15.0	60.0		--
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.
0	2-CAFFEOYL-TARTARIC-ACID	Shoot		1000.0		Jim Duke's personal files.
0	DODECA-2-TRANS-4-TRANS-8-CIS-TRIENOIC-ACID-ISOBUTYLAMIDE	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.
14	CICHORIC-ACID	Shoot				Jim Duke's personal files.
0	UNDECA-2-TRANS-4-CIS-DIENE-8,10-DIENOIC-ACID-ISOBUTYLAMIDE	Root				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.
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-DIENOIC-ACID-ISOBUTYLAMIDE	Root				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.
0	RESIN	Root	5020.0	20000.0	-1.1686515095574843	--
0	GUM	Root	20080.0	80000.0	-1.0883506063091624	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DODECA-2,4,8,10-TETRAEN-1-OIC-ACID-ISOBUTYLAMIDE	Root		166.7	-1.0	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.
0	UNDECA-TRANS-2-CIS-4-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		5.6	-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.
0	UNDECA-CIS-2-TRANS-4-DIENE-8,10-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		12.8	-1.0	Jim Duke's personal files.
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	TRIDECA-TRANS-2-CIS-7-DIENE-10,12-DIYNOIC-ACID-ISOBUTYLAMIDE	Root		4.4	-0.9999999999999998	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.
14	SUCROSE	Root		34000.0	-0.9160418188104167	Jim Duke's personal files.
77	ZINC	Root	1.3	5.1	-0.8355779101426338	--
5	STARCH	Root	30120.0	120000.0	-0.818804895582863	--
0	EO	Shoot	900.0	3200.0	-0.656845084060254	Jim Duke's personal files.
14	POTASSIUM	Root	2031.0	8090.0	-0.5629990790704673	--
0	TRIDECA-1-11-DIENE-3-5-7-9-TETRAYNE	Root		100.0	-0.5513525242543177	Jim Duke's personal files.
0	EO	Root	628.0	2500.0	-0.5370357854651269	--
19	INULIN	Root	42670.0	170000.0	-0.5352651016442753	--
4	PHOSPHORUS	Root	198.0	790.0	-0.47928982526561387	--
1	SODIUM	Root	23.0	90.0	-0.4708671369343761	--
28	CALCIUM	Root	826.0	3290.0	-0.4504262877394521	--
14	MANGANESE	Root	3.0	10.1	-0.4252699671884822	--
53	BETA-CAROTENE	Root	0.6	2.2	-0.4223548942066434	--
65	MAGNESIUM	Root	467.0	1860.0	-0.3732958440640499	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	IRON	Root	18.0	70.0	-0.3399578709623491	--
0	THIAMINE	Root	0.7	2.6	-0.3397593870321354	--
0	FAT	Root	3263.0	13000.0	-0.3294780368795451	--
2	GERMACRENE-D	Shoot		120.0	-0.3032170149983238	--
0	PROTEIN	Root	23092.0	92000.0	-0.2966070707869874	--
0	EO	Flower	1300.0	4800.0	-0.2635198701703331	Jim Duke's personal files.
2	COBALT	Root	4.0	14.8	-0.2239738444132915	--
60	SELENIUM	Root	0.5	2.1	-0.21306605490417255	--
4	SILICON	Root	8.0	30.1	-0.20463462833135423	--
24	CHROMIUM	Root	0.5	1.9	-0.18124589408844657	--
112	ASCORBIC-ACID	Root	212.0	843.0	-0.16407727962118843	--
0	WATER	Root		749000.0	-0.13250827284057254	--
0	FIBER(CRUDE)	Root		111000.0	-0.008159256327467447	--
4	TIN	Root	4.3	17.0	0.05222691114208539	--
5	ALUMINUM	Root	197.0	786.0	0.10925347177124488	--
0	ASH	Root	20080.0	80000.0	0.35526479427075014	--
39	NIACIN	Root	17.0	68.0	0.5147577614900641	--
0	GLYCINE-BETAINE	Flower		16450.0	1.0	Jim Duke's personal files.
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	TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Flower		5000.0	1.0	Jim Duke's personal files.
0	GLYCINE-BETAINE	Root		4500.0	1.0	Jim Duke's personal files.
0	GLYCINE-BETAINE	Stem		5650.0	1.0	Jim Duke's personal files.
0	TRIDECA-8,10,12-TRIENE-2,4,6-TRIYNE	Root	200.0	300.0	1.0	Jim Duke's personal files.
0	GLYCINE-BETAINE	Leaf		11200.0	1.0	Jim Duke's personal files.
0	FIBER(DIETARY)	Root		512000.0	1.2403190416116665	--
0	TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Root	1.7	12500.0	1.3010874649309312	Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
15	RIBOFLAVIN	Root	3.0	12.0	1.734423986242379	--