

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Perilla frutescens*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(2E,4E,6E)-ALLOFARNESENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	(2Z,4E,6E)-ALLOFARNESENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	12-ACETYLOCTADEC-9-ENOIC-ACID	Leaf				Lee, K. I., Rhee, S. H., Park, K. Y., Kim, J. O. 1992. Antimutagenic Compounds Identified from Perilla Leaf. Han'guk Yongyang Siklyong Hakhoe Chi, 21(3): 302-307.
1	3',4',5,7-TETRAHYDROXYFLAVONE	Plant				--
0	3(S)-HYDROXY-4(R)-(1-METHYL-ETHENYL)-CYCLOHEX-1-ENE-1-CARBOXALDEHYDE	Shoot		122.0		Tada, M., Matsumoto, R., Chiba, K. 1996. An Oxidative Metabolite of Perillaldehyde from <i>Perilla frutescens</i> . Phytochemistry, 43(4): 803-804.
0	3,4-DIHYDROXYBENZALDEHYDE	Plant				--
1	3,4-DIHYDROXYBENZOATE	Plant				--
1	6,7-DIHYDROXYCOUMARIN	Plant				--
0	ALPHA-BERGAMOTENE	Leaf Essent. Oil		35000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
0	ALPHA-BERGAMOTENE	Plant				Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-CARYOPHYLLENE	Leaf Essent. Oil		1300.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	ALPHA-COPAENE	Shoot Essent. Oil		12000.0	1.0	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
2	ALPHA-HUMULENE	Shoot Essent. Oil		13000.0	1.096855435330446	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
11	ALPHA-PHELLANDRENE	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
28	ALPHA-PINENE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
28	ALPHA-PINENE	Shoot Essent. Oil		7000.0	-0.48009873288752886	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
0	ALPHA-TERPINEOL ACETATE	Leaf Essent. Oil		1300.0	-1.2703234961766654	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	AMYGDALIN	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
30	ANTHOCYANINS	Leaf				Koezuka, Y., Honda, G., Sakamoto, S., Tabata, M. 1985. Genetic Control of Anthocyanin Production in <i>Perilla frutescens</i> . Shoyakugaku Zasshi, 39(3): 228-231.
101	APIGENIN	Seed				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	AROMADENDRENE	Leaf Essent. Oil		3000.0	-0.7151266946995278	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
112	ASCORBIC-ACID	Flower				Lamparska, K. 1966. Studies on Vitamin C Dynamics in <i>Perilla ocymoides</i> and in <i>Calendula officinalis</i> Grown in Short and Long Day Conditions. Zesz Nauk Uniw Mikolaja Kopernika Toruniu Biol, 8: 69-.
112	ASCORBIC-ACID	Seed	0.0	200.0	-0.21838688378037904	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
112	ASCORBIC-ACID	Leaf	460.0	3286.0	-0.13902116919471427	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Seed	10000.0	85000.0	1.1164782063611056	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Leaf	20000.0	143000.0	0.42546353561245137	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
24	BENZALDEHYDE	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	BENZALDEHYDE	Leaf Essent. Oil		16000.0	0.718924077170524	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	BETA-BOURBONENE	Shoot Essent. Oil		12000.0	1.262572667633647	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
53	BETA-CAROTENE	Seed	7.0	66.0	3.696302803889577	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Leaf	44.0	313.0	0.22515910945857653	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	BETA-CARYOPHYLLENE	Shoot Essent. Oil		167000.0	1.2291016085622715	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
0	BETA-CARYOPHYLLENE	Leaf Essent. Oil		38000.0	-0.1796486236955391	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	BETA-CARYOPHYLLENE	Plant				Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	BETA-D-GLUCOSIDE-5-ALLYL-4-METHOXY-1,2-METHYLENEDIOXY-3-PHENYL	Leaf		8.0		Fujita, T., Nakayama, M. 1993. Aromatic Glycoside from <i>Perilla frutescens</i> . Patent-Japan Kokai Tokkyo Koho 05,86,087: 3 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	BETA-ELEMENE	Shoot Essent. Oil		4000.0	-0.6678588061133466	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
13	BETA-PINENE	Shoot Essent. Oil		8000.0	0.7175248073400797	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
13	BETA-PINENE	Leaf Essent. Oil		6000.0	-0.7343330725461312	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
47	BETA-SITOSTEROL	Shoot				Manandhar, M. D. 1981. Constituents of <i>Perilla ocimoides</i> Linn. <i>J. Nep. Chem. Soc.</i> , 1(1): 18-20.
47	BETA-SITOSTEROL	Plant				Han, J. S. 1978. A Study on Sterol in <i>Perilla frutescens</i> . <i>Yongnam Taehakkyo Nonmumjip Chayon Kwahak Pyon</i> , 11: 211-215.
47	BETA-SITOSTEROL	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of <i>Perilla frutescens</i> and <i>Linum Usitatissimum</i> . <i>Takyo Gakugei Daigaku Kiyo Dai-4-Bumon</i> , 45: 27-32.
102	CAFFEIC-ACID	Plant				J.S. Glasby <i>Dict.Pls Containing 2ndary Metabolite</i> . 1991.
28	CALCIUM	Seed	1400.0	3500.0	-0.11871991446123692	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Plant		12670.0	-0.09834434415922177	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
28	CALCIUM	Leaf	1970.0	14071.0	-0.29833084281945965	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	CAMPESTEROL	Plant				Han, J. S. 1978. A Study on Sterol in <i>Perilla frutescens</i> . Yongnam Taehakkyo Nonmunjip Chayon Kwahak Pyon, 11: 211-215.
9	CAMPHENE	Shoot Essent. Oil		2000.0	-0.7130808318988705	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
0	CARBOHYDRATE	Plant		80000.0	-1.6783481961696203	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATE	Seed	69000.0	585000.0	0.22107019077623707	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATE	Leaf		571000.0	-1.0174473779432645	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Seed	69000.0	585000.0	0.24480175646685978	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Plant		80000.0	-3.814311168550122	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Leaf		571000.0	-0.32486167569328217	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
19	CARVONE	Shoot Essent. Oil		11000.0	-0.7470311717738904	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
8	CARYOPHYLLENE-OXIDE	Shoot Essent. Oil		21000.0		Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
0	CASTASTERONE	Seed				Park, K. H., Kim, S. J., Hyun, K. H. 1993. Brassinosteroid Substances in Immature <i>Perilla frutescens</i> Seeds. Han'guk Nonghwa Hakhoe Chi, 36(3): 197-201.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CIS-BETA-OCIMENE	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
0	CIS-NEROLIDOL	Shoot Essent. Oil		4000.0		Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
53	CITRAL	Plant				Chemical Constituents of Oriental Herbs (3 diff. books)
53	CITRAL	Essential Oil		200000.0	-0.0890530595558191	--
12	COPPER	Plant		17.0	0.33037825900684764	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
0	CYANIDIN-3,5-DIGLUCOSIDE	Leaf				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
9	DELPHINIDIN	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	DELTA-CADINENE	Shoot Essent. Oil		8000.0	-1.0	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
6	DILLAPIOL	Leaf	2200.0	3400.0		Phytochemistry, 25: 2085.
0	EGOMAKETONE	Inflorescence				Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of Perilla ocimoides. J. Indian Chem. Soc., 66(3): 183-184.
16	ELEMICIN	Leaf	2500.0	3200.0	1.7086208067564062	Phytochemistry, 25: 2085.
0	ELSHOLTZIAKETONE	Plant				Phytochemistry, 25: 859.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EO	Plant	1000.0	13000.0	0.24784835906684596	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	EO	Stem		500.0	-0.46984387579591813	Janicki, J., Tobolewicz, I. 1953. Perilla ocymoides-A Raw material for the Production of Natural Oils. Przem Rolny Spozyw, 7: 56-.
0	EO	Leaf		10400.0	-0.09983709784904646	Janicki, J., Tobolewicz, I. 1953. Perilla ocymoides-A Raw material for the Production of Natural Oils. Przem Rolny Spozyw, 7: 56-.
12	ESTRAGOLE	Essential Oil				Hoang Van Phiet, Hoang Thanh Huong. 1978. Chemical Composition of the Essential Oil of Perilla ocymoides L. Tap San Hoa Hoc 16(2): 24-28.
8	ESTRONE	Sprout Seedling				Kopcewicz, J. 1972. Estrogens in the Short-Day Plants Perilla ocimoides and Chenopodium rubrum Grown Under Inductive and Non-Inductive Light Conditions. Z. Pflanzenphysiol, 67(4): 373-376.
0	ETHOXY-2-ACETATE	Leaf				Lee, K. I., Rhee, S. H., Park, K. Y., Kim, J. O. 1992. Antimutagenic Compounds Identified from Perilla Leaf. Han'guk Yongyang Siklyong Hakhoe Chi, 21(3): 302-307.
2	FARNESENE	Leaf Essent. Oil		1000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
0	FAT	Seed	13000.0	481000.0	1.1357076813186067	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Leaf		6000.0	-1.0055477658872076	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Seed	37000.0	280000.0	1.1466912185840736	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	FIBER	Leaf		15000.0	-1.8120723253222295	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FURYLKETONE	Plant				--
13	GERANIAL	Leaf Essent. Oil				Honda, G., Yuba, A., Nishizawa, A., Tabata, M. 1994. Genetic Control of Geranial Formation in <i>Perilla frutescens</i> . <i>Biochem. Genet.</i> 32(5/6): 155-160.
0	GERANYL-PYROPHOSPHATE	Plant				Phytochemistry, 25: 859.
2	GERMACRENE-D	Shoot Essent. Oil		58000.0	0.11262888752353756	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
7	GLUCOSE	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	HEXAN-2-OL	Leaf Essent. Oil		2300.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	HOMODOLICHOLIDE	Seed				Park, K. H., Kim, S. J., Hyun, K. H. 1993. Brassinosteroid Substances in Immature <i>Perilla frutescens</i> Seeds. <i>Han'guk Nonghwa Hakhoe Chi</i> , 36(3): 197-201.
6	IRON	Seed	13.0	135.0	-0.07337959709340161	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Plant		460.0	-0.19659048716406988	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
6	IRON	Leaf	67.0	479.0	0.2935611332946958	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ISOEGOMAKEKETONE	Plant				Phytochemistry, 25: 859.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOEGOMAKETONE	Inflorescence				Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of Perilla ocimoides. J. Indian Chem. Soc., 66(3): 183-184.
16	ISOEUGENOL	Leaf Essent. Oil		2500.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
0	ISOFUCOSTEROL	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of Perilla frutescens and Linum Usitatissimum. Takyo Gakugei Daigaku Kiyo Dai-4-Bumon, 45: 27-32.
60	LIMONENE	Shoot Essent. Oil		284000.0	2.030292143160805	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
60	LIMONENE	Leaf Essent. Oil		128000.0	-0.11241708734618	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
60	LIMONENE	Plant				--
4	LIMONENE-OXIDE	Leaf Essent. Oil		1000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOL	Plant				Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
53	LINALOOL	Plant				Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
53	LINALOOL	Shoot Essent. Oil		35000.0	-1.3522910858907715	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
53	LINALOOL	Leaf Essent. Oil		26000.0	-0.5312142938477685	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
27	LINOLEIC-ACID	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of <i>Perilla frutescens</i> and <i>Linum Usitatissimum</i> . <i>Takyo Gakugei Daigaku Kiyu Dai-4-Bumon</i> , 45: 27-32.
27	LINOLEIC-ACID	Seed Oil		176000.0	-0.8459319745212549	Longyah, T., Deosthale, Y. G. 1991. Chemical and Nutritional Studies on Hanshi ( <i>Perilla frutescens</i> ), a Traditional Oilseed from Northeast India. <i>J. Amer. Oil Chem. Soc.</i> , 68(10): 781-784.
0	LINOLENIC-ACID	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of <i>Perilla frutescens</i> and <i>Linum Usitatissimum</i> . <i>Takyo Gakugei Daigaku Kiyu Dai-4-Bumon</i> , 45: 27-32.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINOLENIC-ACID	Seed Oil	568000.0	697700.0	1.4492032513448039	--
0	LINOLENIC-ACID	Shoot				Manandhar, M. D. 1981. Constituents of <i>Perilla ocimoides</i> Linn. J. Nep. Chem. Soc., 1(1): 18-20.
0	LINOLENIC-ACID-ETHYL-ESTER	Shoot				Manandhar, M. D. 1981. Constituents of <i>Perilla ocimoides</i> Linn. J. Nep. Chem. Soc., 1(1): 18-20.
78	LUTEOLIN	Seed				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
78	LUTEOLIN	Leaf				Abstract (See species file)
65	MAGNESIUM	Plant		3830.0	-0.0733534208991365	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
14	MANGANESE	Plant		180.0	0.595188569647348	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
1	METHYL-3,4-DIHYDROXYBENZOATE	Plant				--
1	METHYL-CAFFEATE	Plant				--
22	MYRCENE	Leaf Essent. Oil				Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
22	MYRCENE	Shoot Essent. Oil		9000.0	-0.5369369886865792	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
31	MYRISTICIN	Leaf	300.0	3800.0	1.7019136604462037	<i>Phytochemistry</i> , 25: 2085.
0	NAGINATAKETONE	Plant				<i>Phytochemistry</i> , 25: 859.
39	NIACIN	Seed	5.0	42.0	-0.026523101321419173	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
39	NIACIN	Leaf	8.0	57.0	-0.49263472226862703	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	OCIMENE	Leaf Essent. Oil		4500.0	1.0	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	OCTAN-3-OL	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
0	OCTAN-3-ONE	Shoot Essent. Oil		2000.0		Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
18	OLEIC-ACID	Seed				Endo, S., Ishizaki, T., Kimata, M. 1993. Fatty Acid and Sterol Compositions in the Seeds of <i>Perilla frutescens</i> and <i>Linum Usitatissimum</i> . <i>Takyo Gakugei Daigaku Kiyo Dai-4-Bumon</i> , 45: 27-32.
16	P-CYMENE	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
0	PERILLA-ALCOHOL	Plant				Du, Y., Fu, B., Jiang, X. 1994. <i>Perilla Alcohol Extraction from Perilla frutescens for Fragrance. Patent-Faming Zhuanli Shenqing Gongkai Shuomingshu-1,080,318</i> : 4 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PERILLA-ALDEHYDE	Leaf Essent. Oil		740000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	PERILLA-ALDEHYDE	Essential Oil				--
4	PERILLAKETONE	Inflorescence				Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of <i>Perilla ocimoides</i> . <i>J. Indian Chem. Soc.</i> , 66(3): 183-184.
4	PERILLAKETONE	Shoot		1120.0		Takano, I., Yasuda, I., Hamano, T., Seto, T., Akiyama, K. 1990. Determination of Perilla Ketone in <i>Perilla</i> Herb by Capillary Gas Chromatography/Mass Spectrometry. <i>Eisei Kagaku</i> , 36(4): 320-325.
4	PERILLAKETONE	Leaf				Koezuka, Y., Honda, G., Tabata, M. 1985. An Intestinal Propulsion Promoting Substance from <i>Perilla frutescens</i> and its Mechanism of Action. <i>Plant Medica</i> , 6: 480-482.
4	PERILLAKETONE	Stem				Wilson, B. J. 1977. Perilla Ketone: A Potent Lung Toxin from the Mint Plant, <i>Perilla frutescens</i> . <i>Science</i> , 197: 573-574.
11	PERILLALDEHYDE	Plant	400.0	825.0	-1.0	--
0	PERILLANIN-CHLORIDE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PERILLARTINE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PERILLENE	Inflorescence				Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of <i>Perilla ocimoides</i> . <i>J. Indian Chem. Soc.</i> , 66(3): 183-184.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	PERILLYL-ALCOHOL	Leaf Essent. Oil	2600.0	128000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
0	PHENYLPROPANOIDS	Plant				Chemical Constituents of Oriental Herbs (3 diff. books)
4	PHOSPHORUS	Seed	330.0	5339.0	-0.00379302813674132	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Leaf	730.0	5214.0	0.044625204965614285	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	PHYTOL	Leaf				Lee, K. I., Rhee, S. H., Park, K. Y., Kim, J. O. 1992. Antimutagenic Compounds Identified from <i>Perilla</i> Leaf. <i>Han'guk Yongyang Siklyong Hakhoe Chi</i> , 21(3): 302-307.
7	PIPERITONE	Shoot Essent. Oil		259000.0	1.0	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
14	POTASSIUM	Plant		26100.0	0.3000714315576286	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
14	POTASSIUM	Leaf	6500.0	46429.0	0.7102742427136326	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Seed	26000.0	318000.0	0.749037586740522	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Leaf		34000.0	-1.7741762060439268	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
43	PROTocatechuic-acid	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PRUNASIN	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	PSEUDOLIMONENE	Leaf Essent. Oil		2000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
28	PULEGONE	Leaf Essent. Oil		9000.0		Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
176	QUERCETIN	Leaf				Abstract (See species file)
15	RIBOFLAVIN	Seed	1.0	8.0	1.7153626421987014	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Leaf	3.0	23.0	-0.07004935403039353	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
57	ROSMARINIC-ACID	Seed		2300.0		Yakugaku Zasshi, 106: 1108.
57	ROSMARINIC-ACID	Leaf	10300.0	12100.0	0.6058460455474213	Yakugaku Zasshi, 106: 1108.
57	ROSMARINIC-ACID	Stem		2900.0	1.3699298069795482	Yakugaku Zasshi, 106: 1108.
5	SABINENE	Leaf Essent. Oil		4000.0	-0.5730180688260574	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	SABINENE	Shoot Essent. Oil				Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of <i>Perilla frutescens</i> (L.) Britton. <i>J. Essent. Oil Res.</i> , 7(4): 429-432.
0	SCUTELLERIN	Plant				J.S. Glasby <i>Dict. Pls Containing 2ndary Metabolite</i> . 1991.
14	SHIKIMIC-ACID	Plant				<i>Phytochemistry</i> , 25: 859.
1	SODIUM	Plant		204.0	-0.29278537696213475	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
1	SODIUM	Leaf	20.0	1429.0	-0.39348467026361145	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
12	STIGMASTEROL	Plant				Han, J. S. 1978. A Study on Sterol in <i>Perilla frutescens</i> . <i>Yongnam Taehakkyo Nonmunjip Chayon Kwahak Pyon</i> , 11: 211-215.
9	TERPINOLENE	Leaf Essent. Oil		1000.0	-0.6903955924748107	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of <i>Perilla frutescens</i> and Its Synergistic Effects with Polygodial. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
31	THIAMIN	Seed	1.0	7.0	0.09921569102976133	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Leaf	1.0	5.0	-0.688703330240956	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	TRANS-P-MENTH-8-EN-7-YL-CAFFEATE	Plant				--
1	VINYL-CAFFEATE	Plant				--
0	WATER	Seed	63000.0	178000.0	-0.19036313251240586	--
0	WATER	Leaf		860000.0	0.2612346689299543	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	XOI-A	Plant	11.0	78.0		<i>Chem. &amp; Pharm. Bull.</i> 38: 1772.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	XOI-B	Plant	3.0	21.0		Chem. & Pharm. Bull. 38: 1772.
77	ZINC	Plant		50.0	-0.021143645527329686	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.