

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Perilla frutescens*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(2E,4E,63)-ALLOFARNESENE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	(2Z,4E,63)-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		Tada, M., Matsumoto, R., Chiba, K. 1996. An Oxidative Metabolite of Perillaldehyde from Perilla frutescens. Phytochemistry, 43(4): 803-804.
0	3,4-DIHYDROXYBENZALDEHYDE	Plant	--	--		
1	3,4-DIHYDROXYBENZOATE	Plant	--	--		
1	6,7-DIHYDROXYCOUMARIN	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-BERGAMOTENE	Leaf Essent. Oil	--	35000		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	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 Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
0	ALPHA-CARYOPHYLLENE	Leaf Essent. Oil	--	1300		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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-COPAENE	Shoot Essent. Oil	--	12000	1	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.
2	ALPHA-HUMULENE	Shoot Essent. Oil	--	13000	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. J. Essent. Oil Res., 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. J. Essent. Oil Res., 7(4): 429-432.
28	ALPHA-PINENE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
28	ALPHA-PINENE	Shoot Essent. Oil	--	7000	-0.48009873288752886	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. J. Essent. Oil Res., 7(4): 429-432.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-TERPINEOL ACETATE	Leaf Essent. Oil	--	1300	-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.
8	AMYGDALIN	Leaf	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . 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> . <i>Shoyakugaku Zasshi</i> , 39(3): 228-231.
101	APIGENIN	Seed	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	AROMADENDRENE	Leaf Essent. Oil	--	3000	-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. <i>J. Agric. Food Chem.</i> , 40: 2328-2330.
112	ASCORBIC-ACID	Seed	--	200	-0.21838688378037904	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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. <i>Zesz Nauk Uniw Mikolaja Kopernika Toruniu Biol</i> , 8: 69-.
112	ASCORBIC-ACID	Leaf	460	3286	-0.13902116919471427	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Leaf	20000	143000	0.42546353561245137	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ASH	Seed	10000	85000	1.1164782063611056	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 Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
24	BENZALDEHYDE	Leaf Essent. Oil	--	16000	0.718924077170524	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	BETA-BOURBONENE	Shoot Essent. Oil	--	12000	1.262572667633647	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	BETA-CAROTENE	Leaf	44	313	0.22515910945857653	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	BETA-CAROTENE	Seed	7	66	3.696302803889577	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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 Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
0	BETA-CARYOPHYLLENE	Leaf Essent. Oil	--	38000	-0.1796486236955391	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	BETA-CARYOPHYLLENE	Shoot Essent. Oil	--	167000	1.2291016085622715	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-D-GLUCOSIDE-5-ALLYL-4-METHOXY-1,2-METHYLENEDIOXY-3-PHENYL	Leaf	--	8		Fujita, T., Nakayama, M. 1993. Aromatic Glycoside from <i>Perilla frutescens</i> . Patent-Japan Kokai Tokkyo Koho 05,86,087: 3 pp.
5	BETA-ELEMENE	Shoot Essent. Oil	--	4000	-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. J. Essent. Oil Res., 7(4): 429-432.
13	BETA-PINENE	Shoot Essent. Oil	--	8000	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. J. Essent. Oil Res., 7(4): 429-432.
13	BETA-PINENE	Leaf Essent. Oil	--	6000	-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. J. Agric. Food Chem., 40: 2328-2330.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
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	Shoot	--	--		Manandhar, M. D. 1981. Constituents of <i>Perilla ocimoides</i> Linn. <i>J. Nep. Chem. Soc.</i> , 1(1): 18-20.
102	CAFFEIC-ACID	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
28	CALCIUM	Plant	12670	12670	-0.09834434415922177	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
28	CALCIUM	Seed	1400	3500	-0.11871991446123692	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Leaf	1970	14071	-0.29833084281945965	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	CAMPESTEROL	Plant	--	--		Han, J. S. 1978. A Study on Sterol in <i>Perilla frutescens</i> . Yongnam Taehakkyo Nonmumjip Chayon Kwahak Pyon, 11: 211-215.
9	CAMPHENE	Shoot Essent. Oil	--	2000	-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	Leaf	571000	571000	-1.0174473779432645	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATE	Seed	69000	585000	0.22107019077623707	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATE	Plant	80000	80000	-1.6783481961696203	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Leaf	--	571000	-0.32486167569328217	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CARBOHYDRATES	Plant	--	80000	-3.814311168550122	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Seed	69000	585000	0.24480175646685978	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
19	CARVONE	Shoot Essent. Oil	--	11000	-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		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.

Activity 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		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	-0.0890530595558191	
12	COPPER	Plant	17	17	0.33037825900684764	Suziki, 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

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	-1	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.
6	DILLAPIOL	Leaf	2200	3400		Phytochemistry, 25: 2085.
0	EGOMAKETONE	Inflorescence	--	--		Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of <i>Perilla ocimoides</i> . J. Indian Chem. Soc., 66(3): 183-184.
16	ELEMICIN	Leaf	2500	3200	1.7086208067564062	Phytochemistry, 25: 2085.
0	ELSHOLTZIAKETONE	Plant	--	--		Phytochemistry, 25: 859.
0	EO	Plant	1000	13000	0.24784835906684596	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EO	Leaf	--	10400	-0.09983709784904646	Janicki, J., Tobolewicz, I. 1953. <i>Perilla ocymoides</i> -A Raw material for the Production of Natural Oils. <i>Przem Rolny Spozyw</i> , 7: 56-.
0	EO	Stem	--	500	-0.46984387579591813	Janicki, J., Tobolewicz, I. 1953. <i>Perilla ocymoides</i> -A Raw material for the Production of Natural Oils. <i>Przem Rolny Spozyw</i> , 7: 56-.
12	ESTRAGOLE	Essential Oil	--	--		Hoang Van Phiet, Hoang Thanh Huong. 1978. Chemical Composition of the Essential Oil of <i>Perilla ocymoides</i> L. <i>Tap San Hoa Hoc</i> 16(2): 24-28.
8	ESTRONE	Sprout Seedling	--	--		Kopcewicz, J. 1972. Estrogens in the Short-Day Plants <i>Perilla ocimoides</i> and <i>Chenopodium rubrum</i> Grown Under Inductive and Non-Inductive Light Conditions. <i>Z. Pflanzenphysiol</i> , 67(4): 373-376.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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		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	Leaf	6000	6000	-1.0055477658872076	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Seed	13000	481000	1.1357076813186067	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Leaf	15000	15000	-1.8120723253222295	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Seed	37000	280000	1.1466912185840736	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	0.11262888752353756	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		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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HOMODOLICHOLIDE	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.
6	IRON	Leaf	67	479	0.2935611332946958	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Plant	460	460	-0.19659048716406988	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
6	IRON	Seed	13	135	-0.07337959709340161	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ISOEGOMAKEKETONE	Plant	--	--		Phytochemistry, 25: 859.
0	ISOEGOMAKETONE	Inflorescence	--	--		Mathela, C. S., Shah, G. C., Melkani, A. B., Joshi, P. 1989. 3-Substituted-Furanyl Compounds of <i>Perilla ocimoides</i> . J. Indian Chem. Soc., 66(3): 183-184.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	ISOEUGENOL	Leaf Essent. Oil	--	2500		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	Leaf Essent. Oil	--	128000	-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	Shoot Essent. Oil	--	284000	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	LIMONENE	Plant	--	--		
4	LIMONENE-OXIDE	Leaf Essent. Oil	--	1000		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	LINALOL	Plant	--	--		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.
53	LINALOOL	Leaf Essent. Oil	--	26000	-0.5312142938477685	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	LINALOOL	Shoot Essent. Oil	--	35000	-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. J. Essent. Oil Res., 7(4): 429-432.
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. J. Agric. Food Chem., 40: 2328-2330.
27	LINOLEIC-ACID	Seed Oil	--	176000	-0.8459319745212549	Longyah, T., Deosthale, Y. G. 1991. Chemical and Nutritional Studies on Hanshi (<i>Perilla frutescens</i>), a Traditional Oilseed from Northeast India. J. Amer. Oil Chem. Soc., 68(10): 781-784.
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> . Takyo Gakugei Daigaku Kiyo Dai-4-Bumon, 45: 27-32.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINOLENIC-ACID	Shoot	--	--		Manandhar, M. D. 1981. Constituents of Perilla ocimoides Linn. J. Nep. Chem. Soc., 1(1): 18-20.
0	LINOLENIC-ACID	Seed Oil	568000	697700	1.4492032513448039	
0	LINOLENIC-ACID	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.
0	LINOLENIC-ACID-ETHYL-ESTER	Shoot	--	--		Manandhar, M. D. 1981. Constituents of Perilla ocimoides Linn. J. Nep. Chem. Soc., 1(1): 18-20.
78	LUTEOLIN	Leaf	--	--		Abstract (See species file)
78	LUTEOLIN	Seed	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
65	MAGNESIUM	Plant	3830	3830	-0.0733534208991365	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	MANGANESE	Plant	180	180	0.595188569647348	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 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 Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
22	MYRCENE	Shoot Essent. Oil	--	9000	-0.5369369886865792	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.
31	MYRISTICIN	Leaf	300	3800	1.7019136604462037	Phytochemistry, 25: 2085.
0	NAGINATAKETONE	Plant	--	--		Phytochemistry, 25: 859.
39	NIACIN	Leaf	8	57	-0.49263472226862703	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
39	NIACIN	Seed	5	42	-0.026523101321419173	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	OCIMENE	Leaf Essent. Oil	--	4500	1	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	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 Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
0	OCTAN-3-ONE	Shoot Essent. Oil	--	2000		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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	OLEIC-ACID	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.
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 Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
0	PERILLA-ALCOHOL	Plant	--	--		Du, Y., Fu, B., Jiang, X. 1994. Perilla Alcohol Extraction from Perilla frutescens for Fragrance. Patent-Faming Zhuanli Shenqing Gongkai Shuomingshu-1,080,318: 4 pp.
0	PERILLA-ALDEHYDE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PERILLA-ALDEHYDE	Leaf Essent. Oil	--	740000		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.
4	PERILLAKETONE	Stem	--	--		Wilson, B. J. 1977. Perilla Ketone: A Potent Lung Toxin from the Mint Plant, Perilla frutescens. Science, 197: 573-574.
4	PERILLAKETONE	Leaf	--	--		Koezuka, Y., Honda, G., Tabata, M. 1985. An Intestinal Propulsion Promoting Substance from Perilla frutescens and its Mechanism of Action. Plant Medica, 6: 480-482.
4	PERILLAKETONE	Shoot	--	1120		Takano, I., Yasuda, I., Hamano, T., Seto, T., Akiyama, K. 1990. Determination of Perilla Ketone in Perilla Herb by Capillary Gas Chromatography/Mass Spectrometry. Eisei Kagaku, 36(4): 320-325.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	PERILLAKETONE	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.
11	PERILLALDEHYDE	Plant	400	825	-1	
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 Perilla ocimoides. J. Indian Chem. Soc., 66(3): 183-184.
14	PERILLYL-ALCOHOL	Leaf Essent. Oil	2600	128000		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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PHENYLPROPANOIDS	Plant	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
4	PHOSPHORUS	Seed	330	5339	-0.00379302813674132	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Leaf	730	5214	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 Perilla Leaf. Han'guk Yongyang Siklyong Hakhoe Chi, 21(3): 302-307.
7	PIPERITONE	Shoot Essent. Oil	--	259000	1	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.
14	POTASSIUM	Leaf	6500	46429	0.7102742427136326	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	POTASSIUM	Plant	26100	26100	0.3000714315576286	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
0	PROTEIN	Leaf	34000	34000	-1.7741762060439268	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Seed	26000	318000	0.749037586740522	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.
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PSEUDOLIMONENE	Leaf Essent. Oil	--	2000		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.
28	PULEGONE	Leaf Essent. Oil	--	9000		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.
176	QUERCETIN	Leaf	--	--		Abstract (See species file)
15	RIBOFLAVIN	Leaf	3	23	-0.07004935403039353	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Seed	1	8	1.7153626421987014	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
57	ROSMARINIC-ACID	Leaf	10300	12100	0.6058460455474213	Yakugaku Zasshi, 106: 1108.
57	ROSMARINIC-ACID	Seed	2300	2300		Yakugaku Zasshi, 106: 1108.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
57	ROSMARINIC-ACID	Stem	2900	2900	1.3699298069795482	Yakugaku Zasshi, 106: 1108.
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 Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
5	SABINENE	Leaf Essent. Oil	--	4000	-0.5730180688260574	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	SCUTELLEREIN	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
14	SHIKIMIC-ACID	Plant	--	--		Phytochemistry, 25: 859.
1	SODIUM	Leaf	20	1429	-0.39348467026361145	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SODIUM	Plant	204	204	-0.29278537696213475	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	STIGMASTEROL	Plant	--	--		Han, J. S. 1978. A Study on Sterol in <i>Perilla frutescens</i> . Yongnam Taehakkyo Nonmumjip Chayon Kwahak Pyon, 11: 211-215.
9	TERPINOLENE	Leaf Essent. Oil	--	1000	-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. J. Agric. Food Chem., 40: 2328-2330.
31	THIAMIN	Seed	1	7	0.09921569102976133	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Leaf	1	5	-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	Leaf	860000	860000	0.2612346689299543	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	WATER	Seed	63000	178000	-0.19036313251240586	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	XOI-A	Plant	11	78		Chem. & Pharm. Bull. 38: 1772.
0	XOI-B	Plant	3	21		Chem. & Pharm. Bull. 38: 1772.
77	ZINC	Plant	50	50	-0.021143645527329686	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.