

C OLEANOLIC-ACID

Chemid

OLEANOLICACID

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Achyranthes aspera	Plant	--	--		--
Achyranthes bidentata	Fruit	--	--		--
Agastache rugosa	Root	10	10	-0.8643260077603725	Jim Duke's personal files.
Akebia quinata	Stem	--	--		--
Albizia lebeck	Seed	--	--		Wealth of India.
Allium cepa	Bulb	--	--		--
Allium sativum var. sativum	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
Apocynum cannabinum	Root	--	--		--
Arctostaphylos uva-ursi	Plant	--	--		--
Arctostaphylos uva-ursi	Tissue Culture	--	454.5		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Arctostaphylos uva-ursi	Shoot	--	--		--
Arctostaphylos uva-ursi	Leaf	--	--		--
Artemisia annua	Plant	--	--		Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.
Calendula officinalis	Flower	--	--		--
Catharanthus roseus	Plant	--	--		Rizk, A.F.M., The Phytochemistry of the Flora of Qatar, Scientific and Applied Research Centre, University of Qatar, Kingprint, Richmond, UK, 1986.
Centaurium erythraea	Plant	--	--		--
Chenopodium album	Plant	--	--		--
Chenopodium quinoa	Tissue Culture	--	--		Jim Duke's personal files.
Chenopodium quinoa	Root	--	--		Jim Duke's personal files.
Chenopodium quinoa	Fruit	--	--		Jim Duke's personal files.
Chimaphila umbellata	Shoot	--	--		--
Citrullus colocynthis	Plant	--	--		--
Cnicus benedictus	Plant	--	--		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Cnicus benedictus	Shoot	--	--		Jim Duke's personal files.
Cornus officinalis	Seed	--	--		--
Crataegus laevigata	Plant	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Crataegus monogyna	Plant	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Crataegus monogyna	Inflorescence	--	--		--
Crocus sativus	Silk Stigma Style	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Cyperus rotundus	Tuber	--	--		--
Daemonorops draco	Fruit	--	--		--
Elaeagnus angustifolia	Plant	--	--		Hetherington, M and Steck, W. 1997. Natural chemicals from northern prairie plants - the phytochemical contents of one thousand North American species. 277 pp. Ag-West Biotech, Inc. Saskatoon, Canada. Fytokem Products, Saskatoon.
Elaeagnus angustifolia	Bark	--	2140	1	Zhong, J. F., Jin, J. H., Li, X. P. 1991. Determination of Oleanolic Acid in Russian Olive (Elaeagnus angustifolia) by TLC-Scanning. Chung Ts'ao Yao 22 3: 398-399. Gansu Inst New Med Pharm Sci Lanzhou 730050 China.
Elaeagnus pungens	Leaf	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
Eleutherococcus senticosus	Root	--	84	-0.6809540909763485	--
Eleutherococcus senticosus	Leaf	--	--		--
Eriobotrya japonica	Leaf	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)

Plant	Part	Low PPM	High PPM	StdDev	Reference
Eucalyptus globulus	Leaf	--	--		--
Ficus carica	Leaf	--	--		--
Forsythia suspensa	Fruit	--	--		--
Glechoma hederacea	Plant	--	360	-1.0986728439772253	--
Harpagophytum procumbens	Root	--	--		--
Harpagophytum procumbens	Tuber	--	--		--
Hedera helix	Leaf	--	--		--
Helianthus annuus	Flower	--	--		Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar.
Humulus lupulus	Stem	--	--		--
Hyssopus officinalis	Plant	--	--		--
Lavandula latifolia	Leaf	4900	4900	2.139880287127935	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Leonurus cardiaca	Plant	--	--		--
Ligustrum japonicum	Fruit	--	--		--
Ligustrum lucidum	Fruit	0.7	80400	1	--
Ligustrum lucidum	Leaf	--	--		--
Ligustrum lucidum	Plant	--	--		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Ligustrum lucidum	Seed	--	--		--
Liquidambar orientalis	Resin, Exudate, Sap	--	--		--
Liquidambar styraciflua	Resin, Exudate, Sap	--	--		--
Luffa aegyptiaca	Seed	--	--		--
Matricaria recutita	Flower	--	--		--
Melaleuca leucadendra	Plant	--	--		--
Melilotus officinalis	Leaf	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Melissa officinalis	Shoot	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Mentha spicata	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Mentha spicata	Shoot	--	--		--
Mentha x rotundifolia	Tissue Culture	--	--		Jim Duke's personal files.
Myristica fragrans	Seed	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
Myroxylon balsamum	Plant	--	--		--
Nerium oleander	Plant	--	--		--
Ocimum basilicum	Flower	1300	1300	-0.6357280607585934	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Ocimum basilicum	Leaf	--	1700	0.19433717473155765	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Ocimum suave	Leaf	--	--		J. Nat. Prod. 44: 308.
Ocimum tenuiflorum	Leaf	0	2180	0.48616864159101425	--
Olea europaea	Petiole	--	--		--
Olea europaea	Hull Husk	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Origanum majorana	Plant	4700	4700	0.19004070814741195	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Origanum vulgare	Plant	--	--		--
Panax ginseng	Root	150	700	0.845493216306878	--
Panax japonicus	Rhizome	--	--		--
Panax quinquefolius	Plant	--	20	-1.1996319701805378	--
Panax quinquefolius	Root	600	980	1.5393329014356174	--
Phoradendron juniperinum	Shoot	--	3	-1.3550810091963932	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
Phytolacca americana	Root	--	--		--
Pistacia lentiscus	Plant	--	--		--
Plantago major	Leaf	--	--		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Plectranthus amboinicus	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
Prosopis glandulosa	Shoot	--	15	0.32708851946119877	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
Prosopis glandulosa	Stem	--	--		Zirvi, K. A., Jewers, K., Nagler, M. J. 1977. Phytochemical Investigation of Prosopis glandulosa Stems. Planta Med. Suppl. 32: 244-246.
Prosopis glandulosa	Flower	--	--		Ahmed, N., Razaq, S. 1986. Chemical Investigation of Prosopis glandulosa Flowers. Fitoterapia 57 6: 457.
Prunella vulgaris	Plant	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
Prunus africana	Bark	--	--		--
Prunus cerasus	Fruit	--	--		--
Psidium guajava	Leaf	--	--		--
Psidium guajava	Flower	--	--		--
Psidium guajava	Heart Wood	--	--		--
Psidium guajava	Fruit	--	--		--
Punica granatum	Flower	--	--		--
Quisqualis indica	Fruit	--	--		--
Rosa woodsii	Leaf	--	65	-0.7997137592584663	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
Rosmarinus officinalis	Plant	10500	10500	1.9122846257333326	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Rosmarinus officinalis	Shoot	20	20	1.0279924897351953	--
Salvia officinalis	Leaf	140	786	-0.36135857674665767	--
Salvia officinalis	Stem	400	400	1	--
Salvia sclarea	Plant	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Salvia triloba	Plant	5200	5200	0.3385100113875775	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Sambucus canadensis	Leaf	--	--		--
Sambucus nigra	Bark	--	503	-1	--
Sambucus nigra	Leaf	--	--		--
Sambucus nigra	Flower	--	--		--
Satureja hortensis	Plant	600	600	-1.0274075784219459	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Satureja montana	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Syzygium aromaticum	Flower	--	20000	1.4118875102795632	--
Syzygium aromaticum	Fruit	35	20000	-1	--
Syzygium aromaticum	Essential Oil	10000	10000		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Syzygium aromaticum	Seed	--	7	-1	--
Syzygium claviflorum	Leaf	--	14	-0.8307208526122837	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
Terminalia arjuna	Flower	--	17.5	-0.7761594495209697	Tripathi, V. K., Pandey, V. B., Udupa, K. N., Rucker, G. 1992. Arjunolitin, a Triterpene Glycoside from Terminalia arjuna. Phytochemistry 31 1: 349-351.
Terminalia arjuna	Leaf	--	17.5	-0.8285929148331	--
Terminalia arjuna	Seed	--	17.5	1	Tripathi, V. K., Pandey, V. B., Udupa, K. N., Rucker, G. 1992. Arjunolitin, a Triterpene Glycoside from Terminalia arjuna. Phytochemistry 31 1: 349-351.
Terminalia arjuna	Stem	--	17.5	-1	Tripathi, V. K., Pandey, V. B., Udupa, K. N., Rucker, G. 1992. Arjunolitin, a Triterpene Glycoside from Terminalia arjuna. Phytochemistry 31 1: 349-351.
Terminalia arjuna	Root Bark	--	10	-1	Anjaneyulu, A. S. R., Rama Prasad, A. V. 1982. Chemical Examination of Roots of Terminalia arjuna (Roxb.) Wight & Arnot: Part I-Characterization of Two New Triterpenoid Glycosides. Indian J. Chem. 21B 6: 530-533.
Terminalia catappa	Bark	--	--		Diyabalanaga, T. K. K., Jayasinghe, U. L. B., Simmonds, P. M., Wannigama, G. P., Wickramasinghe, A. 1997. Chemical Investigation of Terminalia catappa. Acgc. Chem. Res. Commun. 6: 26-28.
Terminalia pallida	Fruit	--	--		--
Ternstroemia gymnanthera	Shoot	--	--		Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. J. Nat. Prod., 61 (9): 1090-1095.
Thymus serpyllum	Plant	4800	4800	0.21973456879544506	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Thymus vulgaris	Plant	6300	6300	0.6651424785159418	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Uncaria tomentosa	Plant	--	--		--
Uncaria tomentosa	Root Bark	100	150	1	--
Urtica dioica	Root	--	20	-0.8395460190057746	--
Urtica dioica	Flower	--	--		Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Vaccinium corymbosum	Plant	--	--		--
Vaccinium macrocarpon	Fruit	--	--		--
Vaccinium myrtillus	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Verbascum thapsus	Flower	--	--		--
Viburnum prunifolium	Bark	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Viburnum prunifolium	Root Bark	--	--		--
Viscum album	Resin, Exudate, Sap	--	--		--
Vitis vinifera	Leaf Wax	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Vitis vinifera	Pericarp	--	--		--
Zea mays	Silk Stigma Style	--	--		--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Zizyphus jujuba	Plant	--	--		--
