



ESPINHEIRA SANTA POWDER

1 pound (16 oz)

Retail price: \$25.00

Description: Espinheira santa contains a group of well known plant chemicals called *maytansinoids* including two important chemicals named *maytansine* and *maytanprine*. These chemicals have been studied since the early 1970's for their active biological properties and uses.* Raintree's espinheira santa powder (*Maytenus ilicifolia*) is 100% pure, dried, ground leaves of this chemically-rich rainforest plant. It has been milled into a fine powder which is suitable to stuff into capsules or to prepare your own teas, tinctures or extracts. For more complete information on this unique rainforest plant, please see the Raintree Nutrition website and the online [Tropical Plant Database](#).

Traditional Uses:* for cancer (melanoma, carcinoma, adenocarcinoma, lymphoma, leukemia); for stomach disorders (ulcers, acid reflux, gastritis, dyspepsia, indigestion, and to tone, balance, and strengthen the gastric tract); as a menstrual stimulant and for estrogen hormonal balancing during menopause; for adrenal exhaustion and to support adrenal function; for detoxification (skin, blood, kidney, stomach, adrenals)

Ingredients: Pure 100% espinheira santa (*Maytenus ilicifolia*) leaves. This plant has been sustainably wild harvested in the Brazilian Amazon (without any fertilizers or pesticides) and is non-irradiated and non-fumigated.

Suggested Use: This plant is best prepared as an infusion (tea). Use one teaspoon of powder for each cup of water. Pour boiling water over herb in cup and allow to steep 10 minutes. Strain tea (or allow settled powder to remain in the bottom of cup) and drink warm. It is traditionally taken 1 cup dosages, 2-3 times daily.

Contraindications:

- Animal studies suggests that water extracts of espinheira santa may have estrogenic effects and reduce fertility in females. Women seeking treatment for infertility, attempting to get pregnant, or those with estrogen positive cancers should not use this plant.

Drug Interactions: None reported.

Other Observations: None reported.

Clinical Documentation and Research:

This Raintree product has not been the subject of any clinical research. Available third-party research on espinheira santa can be found at the Raintree website. A partial listing of published research on espinheira is shown below:

Anticancerous & Antileukemic Actions:

Liu Z, et al. "Metabolism studies of the anti-tumor agent maytansine and its analog ansamitocin P-3 using liquid chromatography/tandem mass spectrometry." *J. Mass. Spectrom.* 2005; 40(3): 389-99.

Nakao, H., et al. "Cytotoxic activity of maytanprine isolated from *Maytenus diversifolia* in human leukemia K562 cells." *Biol. Pharm. Bull.* 2004; 27(8): 1236-40.

Cassady, J. M., et al. "Recent developments in the maytansinoid antitumor agents." *Chem. Pharm. Bull.* 2004; 52(1): 1-26.

Ohsaki, A., et al. "Four new triterpenoids from *Maytenus ilicifolia*." *J. Nat. Prod.* 2004; 67(3): 469-71.

Horn, R. C., et al. "Antimutagenic activity of extracts of natural substances in the Salmonella/microsome assay." *Mutagenesis.* 2003 Mar; 18(2): 113-8.

Buffa Filho, W., et al. "Quantitative determination for cytotoxic Friedo-nor-oleanane derivatives from five morphological types of *Maytenus ilicifolia* (Celastraceae) by reverse-phase high-performance liquid chromatography." *Phytochem. Anal.* 2002 Mar-Apr; 13(2): 75-8.

Miura, N. et al. "Protective effects of triterpene compounds against the cytotoxicity of cadmium in HepG2 cells." *Mol. Pharm.* 1999; 56(6): 1324-28.

Liu, C., et al. "Eradication of large colon tumor xenografts by targeted delivery of maytansinoids." *Proc. Natl. Acad. Sci.* 1996 Aug; 93(16): 8618-23.

Shirota, O., et al. "Cytotoxic aromatic triterpenes from *Maytenus ilicifolia* and *Maytenus chuchuhuasca*." *J. Nat. Prod.* 1994; 57(12): 1675-81.

Itokawa, H., et al. "Cangorins F–J, five additional oligo-nicotinated sesquiterpene polyesters from *Maytenus ilicifolia*." *J. Nat. Prod.* 1994; 57(4): 460–70.

Arisawa, M., et al. "Cell growth inhibition of KB cells by plant extracts." *Natural Med.* 1994; 48(4): 338–347.

Itokawa, H., et al. "Oligo-nicotinated sesquiterpene polyesters from *Maytenus ilicifolia*." *J. Nat. Prod.* 1993; 56(9): 1479–1485.

Itokawa, H., et al. "Antitumor substances from South American plants." *Pharmacobio. Dyn.* 1992; 15(1): S

Fox, B. W. "Medicinal plants in tropical medicine. 2. Natural products in cancer treatment from bench to the clinic." *Trans. R. Soc. Trop. Med. Hyg.* 1991; 85(1): 22-5.

Ravry, M. J., et al. "Phase II evaluation of maytansine (NSC 153858) in advanced cancer. A Southeastern Cancer Study Group trial." *Am. J. Clin. Oncol.* 1985 Apr; 8(2): 148-50.

Suffnes, M. J., et al. "Current status of the NCI plant and animal product program." *J. Nat. Prod.* 1982; 45: 1–14.

Cabanillas, F., et al. "Phase I study of maytansine using a 3-day schedule." *Cancer Treatment Reports.* 1976; (60): 1127–39.

Chabner, B. A., et al. "Initial clinical trials of maytansine, an antitumor plant alkaloid." *Cancer Treatment Reports.* 1978; (62): 429–33.

O'Connell, M. J., et al. "Phase II trial of maytansine in patients with advanced colorectal carcinoma." *Cancer Treatment Reports.* 1978 (62); 1237-38.

Wolpert-Defillipes, M. K., et al. "Initial studies on the cytotoxic action of maytansine, a novel ansa macrolide." *Biochemical Pharmacology.* 1975; 24: 751–54.

Melo, A. M., et al. "First observations on the topical use of primin, plumbagin and maytenin in patients with skin cancer." *Rev. Inst. Antibiot.* 1974 Dec.

Monache, F. D., et al., "Maitenin: A new antitumoral substance from *Maytenus sp.*" *Gazetta Chimica Italiana* 1972; 102: 317–20.

de Santana, C. F., et al. "Primeiras observacoes sobre o emprego da maitenina em pacientes cancerosos." *Rev. Inst. Antibiot.* 1971; 11: 37–49.

Hartwell, J. L. "Plants used against cancer: A survey." *Lloydia.* 1968; 31: 114.

Anti-ulcer & Antacid Actions:

Cipriani, T. R., et al. "A polysaccharide from a tea (infusion) of *Maytenus ilicifolia* leaves with anti-ulcer protective effects." *J. Nat. Prod.* 2006; 69(7):1018-21.

Ferreira, P. M., et al. "A lyophilized aqueous extract of *Maytenus ilicifolia* leaves inhibits histamine-mediated acid secretion in isolated frog gastric mucosa." *Planta Med.* 2004 Jun; 219(2): 319-24.

Jorge, R. M., et al. "Evaluation of antinociceptive, anti-inflammatory and antiulcerogenic activities of *Maytenus ilicifolia*." *J. Ethnopharmacol.* 2004 Sep; 94(1): 93-100.

Tabach, R., et al. "Evaluation of the anti-ulcerogenic activity of a dry extract of *Maytenus ilicifolia* Martius ex. Reiss produced by a jet spouted bed dryer." *Pharmazie.* 2003 Aug; 58(8): 573-6.

Leite, J. P., et al. "Isolation and HPLC quantitative analysis of flavonoid glycosides from Brazilian beverages (*Maytenus ilicifolia* and *M. aquifolium*)." *J. Agric. Food Chem.* 2001; 49(8): 3796-801.

Queiroga, C. L., et al. "Evaluation of the antiulcerogenic activity of friedelan-3beta-ol and friedelin isolated from *Maytenus ilicifolia* (Celastraceae)." *J. Ethnopharmacol.* 2000 Oct; 72(3): 465-8.

Souza-Formigoni, M. L., et al. "Antiulcerogenic effects of two *Maytenus* species in laboratory animals." *J. Ethnopharmacol.* August 1991.

Anti-inflammatory, Pain-Relieving & Muscle-Relaxant Actions:

Jorge, R. M., et al. "Evaluation of antinociceptive, anti-inflammatory and antiulcerogenic activities of *Maytenus ilicifolia*." *J. Ethnopharmacol.* 2004 Sep; 94(1): 93-100.

Hnatyszyn, O., et al. "Argentinian plant extracts with relaxant effect on the smooth muscle of the corpus cavernosum of guinea pig." *Phytomedicine.* 2003 Nov; 10(8): 669-74.

Antioxidant Actions:

Velloso, J. C., et al. "Antioxidant activity of *Maytenus ilicifolia* root bark." *Fitoterapia.* 2006 Apr; 77(3): 243-4.

Soares, L. A., et al. "Development and validation of a LC-method for determination of catechin and epicatechin in aqueous extractives from leaves of *Maytenus ilicifolia*." *J. Pharm. Biomed. Anal.* 2004 Nov; 36(4): 787-90.

Corsino, J., et al. "Antioxidant flavan-3-ols and flavonol glycosides from *Maytenus aquifolium*." *Phytother. Res.* 2003 Sep; 17(8) :913-6.

Vasorelaxant Actions:

Rattmann, Y. D., et al. "Nitric oxide-dependent vasorelaxation induced by extractive solutions and fractions of *Maytenus ilicifolia* Mart ex Reissek (Celastraceae) leaves." *J. Ethnopharmacol.* 2006 Apr; 104(3): 328-35.

Antimicrobial Actions:

Melo, S. F., et al. "Effect of the *Cymbopogon citratus*, *Maytenus ilicifolia* and *Baccharis genistelloides* extracts against the stannous chloride oxidative damage in *Escherichia coli*." *Mutat. Res.* 2001 Sep; 496(1-2): 33-8.

de Lima, O. G., et al. "Antimicrobial substances from higher plants. XXXVI. On the presence of maytenin and pristimerine in the cortical part of the roots of *Maytenus ilicifolia* from the south of Brazil." *Rev. Inst. Antibiot.* 1971 Jun.

de Lima, O. G., et al. "Substancias antimicrobiano de plantas superiores. Comunicacao XXXI. Maitenina, novo antimicrobiano con acao antineoplastica, isolade de celastracea de pernambuco." *Revista do Instituto de Antibioticos* 1969; (9): 17-25.

Hormonal & Antifertility Actions:

Montanari, T., et al. "Effect of *Maytenus ilicifolia* Mart. on pregnant mice." *Contraception.* 2002 Feb; 65(2): 171-75.

Montanari, T., et al. "Effect of *Maytenus ilicifolia* Mart. Ex. Reiss on spermatogenesis." *Contraception.* 1998; 57(5): 335-39.

Bingel, A. S., et al. "Antifertility screening of selected plants in female rats." *Lloydia.* 1976; 39(6): 475C.

Constitutents Identified:

Tiberti, L. A., et al. "Identification of flavonols in leaves of *Maytenus ilicifolia* and *M. aquifolium* (Celastraceae) by LC/UV/MS analysis." *J. Chromatogr. B. Analyt. Technol. Biomed. Life Sci.* 2006 Sep 29;

Cipriani, T. R., et al. "An arabinogalactan isolated from the medicinal plant *Maytenus ilicifolia*." *J. Nat. Prod.* 2004; 67(4): 703-6.

Leite, J. P., et al. "Isolation and HPLC quantitative analysis of flavonoid glycosides from Brazilian beverages (*Maytenus ilicifolia* and *M. aquifolium*)." *J. Agric. Food Chem.* 2001; 49(8): 3796-801.

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