



MULLACA POWDER

1 pound (16 oz)

Retail price: \$28.00

Description: Raintree's mullaca whole herb powder (*Physalis angulata*) has been milled into a fine powder which is suitable to stuff into capsules or to prepare your own teas, tinctures or extracts. Mullaca is used throughout South America and the Amazon in traditional medicine systems. For more complete information on this unique rainforest plant, please see the Raintree Nutrition internet website and the online [Tropical Plant Database](#).

Traditional Uses:* for bacterial infections of all kinds; for cancer and leukemia; for mycoplasma and mycobacteria infections, for skin diseases (dermatitis, psoriasis, skin infections, rosacea, scleroderma, etc.); for viral infections of all kinds

Ingredients: 100% pure mullaca (*Physalis angulata*) whole herb (root, leaf, and stem). No binders, fillers or additives are used. This product is non-irradiated and non-fumigated. It is a wild harvested product—grown naturally in the Brazilian Amazon without any pesticides or fertilizers.

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 in ½ to 1 cup dosages, 2-3 times daily.

Contraindications:

- One animal study indicates this plant may lower blood pressure and one test tube study demonstrated a blood anticoagulant activity. This plant is contraindicated for people with hemophilia, and those with low blood pressure should monitor their blood pressure accordingly.

Drug Interactions: None reported.

Clinical Documentation and Research:* This Raintree product has not been the subject of any clinical research. Available third-party documentation and clinical research on mullaca be found at the Raintree website and at [PubMed/Medline](#). A partial listing of the third-party published research on mullaca is shown below:

Antimicrobial Actions (antiviral, antibacterial, antimycoplasmal, antimycobacterial):

Silva, M. T., et al. "Studies on antimicrobial activity, *in vitro*, of *Physalis angulata* L. (Solanaceae) fraction and physalin B bringing out the importance of assay determination." *Mem. Inst. Oswaldo Cruz*. 2005 Nov; 100(7): 779-82.

Hwang, J. K., et al. "Anticariogenic activity of some tropical medicinal plants against *Streptococcus mutans*." *Fitoterapia*. 2004 Sep; 75(6): 596-8.

Pietro, R. C., et al. "*In vitro* antimycobacterial activities of *Physalis angulata* L." *Phytomedicine* 2000; 7(4): 335-38.

Januario, A. H., et al. "Antimycobacterial physalins from *Physalis angulata* L. (Solanaceae)." *Phytother. Res.* 2002; 16(5): 445-48.

Hussain, H., et al. "Plants in Kano ethnomedicine; screening for antimicrobial activity and alkaloids." *Int. J. Pharmacol.* 1991; 29(1): 51-56.

Otake, T., et al. "Screening of Indonesian plant extracts for anti-Human Immunodeficiency Virus-Type 1 (HIV-1) Activity." *Phytother. Res.* 1995; 9(1): 6-10.

Kurokawa, M., et al. "Antiviral traditional medicines against Herpes simplex virus (HSV-1), polio virus, and measles virus *in vitro* and their therapeutic efficacies for HSV-1 infection in mice." *Antiviral Res.* 1993; 22(2/3): 175-88.

Kusumoto, I. T., et al. "Screening of some Indonesian medicinal plants for inhibitory effects on HIV-1 protease." *Shoyakugaku Zasshi* 1992; 46(2): 190-93.

Ogunlana, E. O., et al. "Investigations into the antibacterial activities of local plants." *Planta Med.* 1975; 27: 354.

Cytotoxic, Anticancerous & Antileukemic Actions:

- Ausseil, F., et al. "High-throughput bioluminescence screening of ubiquitin-proteasome pathway inhibitors from chemical and natural sources." *J. Biomol. Screen.* 2006 Dec 14;
- Kuo, P. C., et al. "Physanolid A, a novel skeleton steroid, and other cytotoxic principles from *Physalis angulata*." *Org. Lett.* 2006 Jul; 8(14): 2953-6.
- Ichikawa, H., et al. "Withanolides potentiate apoptosis, inhibit invasion, and abolish osteoclastogenesis through suppression of nuclear factor-kappaB (NF-kappaB) activation and NF-kappaB-regulated gene expression." *Mol. Cancer Ther.* 2006; 5(6): 1434-45.
- Magalhaes, H. I., et al. "In-vitro and in-vivo antitumour activity of physalins B and D from *Physalis angulata*." *J. Pharm. Pharmacol.* 2006; 58(2): 235-41.
- Jacobo-Herrera, N. J., et al. "Physalins from *Witheringia solanacea* as modulators of the NF-kappaB cascade." *J. Nat. Prod.* 2006; 69(3): 328-31.
- Hsieh, W. T., et al. "*Physalis angulata* induced G2/M phase arrest in human breast cancer cells." *Food Chem Toxicol.* 2006; 44(7): 974-83.
- Lee, C. C., et al. "Cytotoxicity of plants from Malaysia and Thailand used traditionally to treat cancer." *J. Ethnopharmacol.* 2005 Sep; 100(3): 237-43.
- Wu, S. J., et al. "Antihepatoma activity of *Physalis angulata* and *P. peruviana* extracts and their effects on apoptosis in human Hep G2 cells." *Life Sci.* 2004 Mar; 74(16): 2061-73.
- Leyon, P. V., et al. "Effect of *Withania somnifera* on B16F-10 melanoma induced metastasis in mice." *Phytother. Res.* 2004; 18(2): 118-22.
- Kawai, M., et al. "Cytotoxic activity of physalins and related compounds against HeLa cells." *Pharmazie* 2002; 57(5): 348-50.
- Ismail, N., et al. "A novel cytotoxic flavonoid glycoside from *Physalis angulata*." *Fitoterapia.* 2001 Aug. 72(6): 676-79.
- Lee, Y. C., et al. "Integrity of intermediate filaments is associated with the development of acquired thermotolerance in 9L rat brain tumor cells." *J. Cell. Biochem.* 1995; 57(1): 150-62.
- Perng, M. D., et al. "Induction of aggregation and augmentation of protein kinase-mediated phosphorylation of purified vimentin intermediate filaments by withangulatin A." *Mol. Pharmacol.* 1994; 46(4): 612-17.
- Chiang, H., et al. "Antitumor agent, physalin F from *Physalis angulata* L." *Anticancer Res.* 1992; 12(3): 837-43.
- Chiang, H. et al. "Inhibitory effects of physalin B and physalin F on various human leukemia cells in vitro." *Anticancer Res.* 1992; 12(4): 1155-62.
- Kusumoto, I., et al. "Inhibitory effect of Indonesian plant extracts on reverse transcriptase of an RNA tumour virus (I)." *Phytother. Res.* 1992; 6(5): 241-44.
- Lee, W. C., et al. "Induction of heat-shock response and alterations of protein phosphorylation by a novel topoisomerase II inhibitor, withangulatin A, in 9L rat brain tumor cells." *Cell Physiol.* 1991; 149(1): 66-67.
- Chen, C. M., et al. "Withangulatin A, a new withanolide from *Physalis angulata*." *Heterocycles.* 1990; 31(7): 1371-75.
- Basey, K., et al. "Phygrine, an alkaloid from *Physalis* species." *Phytochemistry.* 1992; 31(12): 4173-76.
- Juang, J. K., et al. "A new compound, withangulatin A, promotes type II DNA topoisomerase-mediated DNA damage." *Biochem. Biophys. Res. Commun.* 1989; 159(3): 1128-34.
- Anon. "Biological assay of antitumor agents from natural products." Abstr.: Seminar on the Development of Drugs from Medicinal Plants Organized by the Department of Medical Science Department at Thai Farmer Bank, Bangkok, Thailand 1982; 129.
- Antoun, M. D., et al. "Potential antitumor agents. XVII. physalin B and 25,26-epidihydrophysalin C from *Witheringia coccoloboides*." *J. Nat. Prod.* 1981; 44(5): 579-85.

Immunomodulatory Actions:

- Soares, M. B., et al. "Physalins B, F and G, seco-steroids purified from *Physalis angulata* L., inhibit lymphocyte function and allogeneic transplant rejection." *Int. Immunopharmacol.* 2006; 6(3): 408-14.
- Garcia, E. S., et al. "*Trypanosoma rangeli*: effects of physalin B on the immune reactions of the infected larvae of *Rhodnius prolixus*." *Exp. Parasitol.* 2006; 112(1): 37-43.
- Soares, M. B., et al. "Inhibition of macrophage activation and lipopolysaccharide-induced death by seco-steroids purified from *Physalis angulata* L." *Eur. J. Pharmacol.* 2003; 459(1): 107-12.
- Lin, Y. S., et al. "Immunomodulatory activity of various fractions derived from *Physalis angulata* L. extract." *Amer. J. Chinese Med.* 1992; 20(3/4): 233-43.
- Shingu, K., et al. "Three new withanolides, physagulins E, F and G from *Physalis angulata* L." *Chem. Pharm. Bull.* 1992; 40(9): 2448-51.
- Sakhilov, A. D., et al. "Immunosuppressive properties of vitasteroids." *Dokl. Akad. Nauk. Uzb. SSR.* 1990; 1: 43-45.

Pain-relieving, Antispasmodic, & Anti-inflammatory Actions:

- Bastos, G. N., et al. "Antinociceptive effect of the aqueous extract obtained from roots of *Physalis angulata* L. on mice." *J. Ethnopharmacol.* 2006 Jan; 103(2): 241-5.
- Vieira, A. T., et al. "Mechanisms of the anti-inflammatory effects of the natural secosteroids physalins in a model of

intestinal ischaemia and reperfusion injury." *Br. J. Pharmacol.* 2005 Sep; 146(2): 244-51.

Choi, E. M., et al. "Investigations of anti-inflammatory and antinociceptive activities of *Piper cubeba*, *Physalis angulata* and *Rosa hybrida*." *J. Ethnopharmacol.* 2003 Nov; 89(1): 171-5.

Cox, P. A. "Pharmacological activity of the Samoan Ethnopharmacopoeia." *Econ. Bot.* 1989; 43(4): 487-97.

Neuroprotective & Neuro-repairing Actions:

Tohda, C., et al. "Search for natural products related to regeneration of the neuronal network." *Neurosignals.* 2005; 14(1-2): 34-45.

Kuboyama, T., et al. "Neuritic regeneration and synaptic reconstruction induced by withanolide A." *Br. J. Pharmacol.* 2005 Apr; 144(7): 961-71.

Anti-cholesterol & Antioxidant Actions:

Choi, E. M., et al. "Effect of some medicinal plants on plasma antioxidant system and lipid levels in rats." *Phytother. Res.* 2005; 19(5): 382-6.

Anticoagulant Actions:

Kone-Bamba, D., et al. "Hemostatic activity of 216 plants used in traditional medicine in the Ivory Coast." *Plant Med. Phytother.* 1987; 21(2): 122-30.

Antiparasitic & Antimalarial Actions:

Abe, F., et al. "Trypanocidal constituents in plants 6. 1) Minor withanolides from the aerial parts of *Physalis angulata*." *Chem. Pharm. Bull.* 2006; 54(8): 1226-8.

Choudhary, M. I., et al. "Antileishmanial physalins from *Physalis minima*." *Chem. Biodivers.* 2005 Sep; 2(9): 1164-73.

Choudhary, M. I., et al. "Biotransformation of physalin H and leishmanicidal activity of its transformed products." *Chem. Pharm. Bull.* 2006; 54(7): 927-30.

Garcia, E. S., et al. "*Trypanosoma rangeli*: effects of physalin B on the immune reactions of the infected larvae of *Rhodnius prolixus*." *Exp. Parasitol.* 2006; 112(1): 37-43.

Nagafuji, S., et al. "Trypanocidal constituents in plants 4. Withanolides from the aerial parts of *Physalis angulata*." *Biol. Pharm. Bull.* 2004; 27(2): 193-7.

Ankrah, N. A., et al. "Evaluation of efficacy and safety of a herbal medicine used for the treatment of malaria." *Phytother. Res.* 2003; 17(6): 697-701.

dos Santos, J. A., et al. "Molluscicidal activity of *Physalis angulata* L. extracts and fractions on *Biomphalaria tenagophila* under laboratory conditions." *Mem. Inst. Oswaldo Cruz.* 2003 Apr; 98(3): 425-8.

This product is sold through [Raintree Nutrition](#) and in retail stores. Please contact a health professional concerning other observations and/or effects of this product and/or if you have any disease, condition, or illness for which you are seeking treatment or products for.

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This product is not intended to treat, cure, or prevent any disease.