

AMAZON VITALITY



120 capsules (650 mg each)

Retail price: \$29.95

Keep your cells young, healthy, and vital with this dynamic formula of 8 rainforest plants documented with cellular protective actions for the skin, brain, liver, kidneys, gastric tract, heart, and immune system.* For more complete information on these unique rainforest plant ingredients, please see the Raintree Nutrition internet website and the online [Tropical Plant Database](#).

Ingredients: A proprietary blend of calaguala, samambaia, chanca piedra, cat's claw, fedegoso, picão preto, gervão, and tayuya.

Suggested Use: Take 1-2 capsules twice daily.

Contraindications: None documented.

Drug Interactions: None documented.

Clinical Documentation and Research:* This proprietary Raintree product has not been the subject of any clinical research. Available third-party documentation and clinical research on each plant ingredient in this formula can be found at the Raintree website or on PubMed. A synopsis and partial listing of published research on these plant ingredients is shown below:

[Calaguala \(Polypodium leucotomos\) and Samambaia \(Polypodium decumanum\)](#)

A herbal extract of these rare rainforest ferns is manufactured and sold in Europe (under the name *anapsos*) as a herbal drug for the treatment of psoriasis, and more recently, for dementia and Alzheimer's Disease. A 1997 U.S. patent and several *in vivo* clinical studies report that the plants protect against brain cell degeneration, promotes repair of damaged brain cells in Alzheimer's and dementia patients, and provides a protective effect to brain cells in general. In a double-blind placebo human trial researchers reported in 2000 that patients with senile dementia improved cognitive performance, increased the blood supply to the brain, and also increased the electrical impulses in the brain. The same cellular protective effects to brain cells seems to extend to skin cells as well. Another U.S. patent was filed in 1997 which indicated these rainforest ferns are effective in preventing sunburn and skin damage (taken internally, as well as applied topically prior to exposure). Its protective effect was reported to be due, in part, to an antioxidant effect, as well as by protecting and increasing the amount of elastin in skin cells. One of the human studies confirming this activity was performed at Massachusetts General Hospital's dermatology department. Another study (with hairless mice), conducted at Harvard medical school in 1999, reported that a samambaia extract applied topically helped to avoid skin damage and sun-associated skin aging, as well as reduced the number of UV-induced skin tumors in mice. The Harvard researchers published a human study in 2004 reporting that samambaia evidenced "substantial benefits of skin protection" to prevent sunburn and prevent skin aging when it was taken internally. Based on some test tube studies, other university student researchers suggested that samambaia may help prevent sun damage and skin aging at low dosages while higher dosages may actually reverse the loss of normal elastic fibers associated with intrinsic aging of the skin. A pharmaceutical company in Spain has also published a study indicating that samambaia is suitable to use as a preventative treatment for sunburn and skin damage.

Álvarez, X. A., et al. "Anapsos improves learning and memory in rats with Beta-Amyloid (1-28) deposits in the hippocampus" in *Progress in Alzheimer's and Parkinson's diseases*, Ed. Fisher, A., Yoshida, M. and Hannin, I., Plenum Press, New York, pp. 699-703 (1998).

Álvarez, X. A., et al. "Double-blind, randomized, placebo-controlled pilot study with anapsos in senile dementia: effects on cognition, brain bioelectrical activity and cerebral hemodynamics." *Methods Find. Exp. Clin. Pharmacol.* 2000; 22(7): 585-94.

Fernandez-Novoa, L., et al. "Effects of Anapsos on the activity of the enzyme Cu-Zn-superoxide dismutase in an animal model of neuronal degeneration." *Methods Find. Exp. Clin. Pharmacol.* 1997; 19(2): 99-106.

Cacabelos, R., et al. "A pharmacogenomic approach to Alzheimer's disease." *Acta Neurol. Scand. Suppl.* 2000; 176: 12-19.

Middelkamp-Hup, M. A., et al. "Orally administered *Polypodium leucotomos* extract decreases psoralen-UVA- induced phototoxicity, pigmentation, and damage of human skin." *J. Am. Acad. Dermatol.* 2004; 50(1): 41-9.

Gonzalez, S., et al. "Inhibition of ultraviolet-induced formation of reactive oxygen species, lipid peroxidation, erythema

and skin photosensitization by *Polypodium leucotomos*." *Photodermatol. Photoimmunol. Photomed.* 1996; 12(2): 45–56.

Gonzalez, S., et al. "Topical or oral administration with an extract of *Polypodium leucotomos* prevents acute sunburn and psoralen-induced phototoxic reactions as well as depletion of Langerhans cells in human skin." *Photodermatol. Photoimmunol. Photomed.* 1997; 13(1–2): 50–60.

Capote, R., et al. "*Polypodium leucotomos* extract inhibits trans-urocanic acid photoisomerization and photodecomposition." *J. Photochem. Photobiol. B.* 2005 Dec 30;

Alcaraz, M. V., et al. "An extract of *Polypodium leucotomos* appears to minimize certain photoaging changes in a hairless albino mouse animal model. A pilot study." *Photodermatol. Photoimmunol. Photomed.* 1999; 15(3–4): 120–26.

Middelkamp-Hup, M. A., et al. "Oral *Polypodium leucotomos* extract decreases ultraviolet-induced damage of human skin." *J. Am. Acad. Dermatol.* 2004 Dec; 51(6): 910-8.

Vasange, M., et al. "The fern *Polypodium decumanum*, used in the treatment of psoriasis, and its fatty acid constituents as inhibitors of leukotriene B4 formation." *Prostaglandins Leukotrienes Essent. Fatty Acids* 1994; 50: 279–284.

Vasange, M., et al. "A sulphonoglycolipid from the fern *Polypodium decumanum* and its effect on the platelet activating factor receptor in human neutrophils." *J. Pharm. Pharmacol.* 1997; 49(5): 562–617.

Quintanilla, A. E., et al. "Pharmaceutical composition of activity in the treatment of cognitive and/or neuroimmune dysfunctions." U.S. patent no. 5,601,829; 1997.

Gombau, L., et al. "*Polypodium leucotomos* extract: Antioxidant activity and disposition." *Toxicol. In Vitro.* 2005 Oct 29;

Chanca piedra (*Phyllanthus niruri, amarus*)

One test tube study and four animal studies documented that extracts of chanca piedra effectively protected against liver damage from introduced chemical liver toxins. Three human clinical studies reported that chanca piedra provided liver protective, liver repair, and liver detoxifying actions in children and adults with hepatitis and jaundice. An animal study documented that chanca piedra almost doubled the life span of mice with liver cancer while a different research group tried to induce liver cancer in mice that had been pre-treated with a water extract of chanca piedra. Their results indicated the chanca piedra extract dose-dependently lowered tumor incidence, levels of carcinogen-metabolizing enzymes, levels of liver cancer markers, and liver injury markers. Both of these studies suggest that the plant has a better ability to prevent cancer rather than a direct ability to kill cancer cells. It may well be that chanca piedra's documented ability to stop cells from mutating plays an important factor in this reported anticancerous activity. In several animal and test tube studies, chanca piedra was shown to stop or inhibit cells from mutating in the presence of chemical substances known to create cellular mutations and DNA strand breaks (which can lead to the creation of cancerous cells). One of these studies also indicated that chanca piedra inhibited several enzyme processes peculiar to cancer cells' replication and growth, rather than a direct toxic effect of killing the cancer cell. This cellular-protective quality was evidenced in other research which indicated that chanca piedra protected against chemically-induced bone marrow damage in mice, as well as against radiation-induced damage in mice.

Kumar K. B., et al. "Protective effect of an extract of *Phyllanthus amarus* against radiation-induced damage in mice." *J. Radiat. Res.* 2004 Mar; 45(1):133-9.

Raphael, K. R. "Anti-mutagenic activity of *Phyllanthus amarus* (Schum. & Thonn.) *in vitro* as well as *in vivo*." *Teratog. Carcinog. Mutagen.* 2002; 22(4): 285–91.

Prakash, A., et al. "Comparative hepatoprotective activity of three *Phyllanthus* species, *P. urinaria*, *P. niruri* and *P. simplex*, on carbon tetrachloride induced liver injury in the rat." *Phytother. Res.* 1995; 9(8): 594–96.

Syamundar, K. V., et al. "Antihepatotoxic principles of *Phyllanthus niruri* herbs." *J. Ethnopharmacol.* 1985; 14(1): 41–4.

Sreenivasa, R. Y., "Experimental production of liver damage and its protection with *Phyllanthus niruri* and *Capparis spinosa* in white albino rats." *Probe* 1985; 24(2): 117–19.

Sripanidkulchai, B., et al. "Antimutagenic and anticarcinogenic effects of *Phyllanthus amarus*." *Phytomedicine* 2002; 9(1): 26–32.

Rajeshkumar, N. V. "Antitumour and anticarcinogenic activity of *Phyllanthus amarus* extract." *J. Ethnopharmacol.* 2002; 81(1): 17–22.

Dhir, H., et al. "Protection afforded by aqueous extracts of *Phyllanthus* species against cytotoxicity induced by lead and aluminium salts." *Phytother. Res.* 1990; 4(5): 172–76.

Cat's Claw (*Uncaria tomentosa*)

This amazing rainforest vine has become quite popular in the U.S. for its patented ability to boost immune function. In addition to its immunostimulant benefits, researchers have reported that cat's claw can aid in DNA cellular repair and prevent cells from mutating; it also can help prevent the loss of white blood cells and immune cell damage caused by many toxins and drugs. Some of the newer research indicates that cat's claw might be helpful to people with Alzheimer's disease by reducing amyloid plaque normally found in the brains of Alzheimer's patients. Another research group recently reported that cat's claw's immune-stimulating alkaloids, pteropodine and isopteropodine, might have other properties and applications. They reported that these two chemicals have shown to have a positive modulating effect on brain neurotransmitters called 5-HT(2) receptors. These receptor sites are targets for drugs used in treating a variety of

conditions, including depression, anxiety, eating disorders, chronic pain conditions, and obesity.

Cisneros, F. J., et al. "An *Uncaria tomentosa* (cat's claw) extract protects mice against ozone-induced lung inflammation." *J. Ethnopharmacol.* 2005 Jan; 96(3): 355-64.

Goncalves, C., et al. "Antioxidant properties of proanthocyanidins of *Uncaria tomentosa* bark decoction: a mechanism for anti-inflammatory activity." *Phytochemistry.* 2005; 66(1): 89-98.

Jurgensen, S., et al. "Involvement of 5-HT₂ receptors in the antinociceptive effect of *Uncaria tomentosa*." *Pharmacol. Biochem. Behav.* 2005 Jul; 81(3): 466-77.

Lemaire, I., et al. "Stimulation of interleukin-1 and -6 production in alveolar macrophages by the neotropical liana, *Uncaria tomentosa* (uña de gato)." *J. Ethnopharmacol.* 1999; 64(2): 109-15.

Sheng, Y., et al., "DNA repair enhancement of aqueous extracts of *Uncaria tomentosa* in a human volunteer study." *Phytomedicine* 2001; 8(4): 275-82.

Sheng, Y., et al., "Enhanced DNA repair, immune function and reduced toxicity of C-Med-100, a novel aqueous extract from *Uncaria tomentosa*." *J. Ethnopharmacol.* 2000; 69(2): 115-26.

Rizzi, R., et al. "Mutagenic and antimutagenic activities of *Uncaria tomentosa* and its extracts." *J. Ethnopharmacol.* 1993; 38: 63-77.

Rizzi, R., et al. "Bacterial cytotoxicity, mutagenicity and antimutagenicity of *Uncaria tomentosa* and its extracts. Antimutagenic activity of *Uncaria tomentosa* in humans." *Premiere Colloque Européen d'Ethnopharmacologie, Metz, France, March 22-24, 1990.*

Castillo, G., et al. "Pharmaceutical compositions containing *Uncaria tomentosa* extract for treating Alzheimer's disease and other amyloidoses." *Patent-Pct. Int. Paol.* 1998; 00 33,659: 67pp.

Mohamed, A. F., et al. "Effects of *Uncaria tomentosa* total alkaloid and its components on experimental amnesia in mice: elucidation using the passive avoidance test." *J. Pharm. Pharmacol.* 2001; 52(12): 1553-61.

Fedegoso (*Cassia occidentalis*)

Fedegoso has been the subject of recent clinical research for its beneficial effects on the liver and immune system. Two research groups published three studies citing the beneficial effects of fedegoso in human patients with liver toxicity, hepatitis, and even acute liver failure. Other researchers published four different animal studies indicating that fedegoso had the ability to protect the liver from various introduced chemical toxins, normalize liver enzymes and processes, and repair liver damage. Some of this research has also reported significant immunostimulant activity by increasing humoral immunity and bone marrow immune cells in mice, and protecting them from chemically-induced immunosuppression. These researchers and others also reported the cellular protective actions of fedegoso. In this research, fedegoso was able to prevent or reduce the mutation of healthy cells in the presence of laboratory chemicals which were known to mutate them.

Sharma, N., et al. "Protective effect of *Cassia occidentalis* extract on chemical-induced chromosomal aberrations in mice." *Drug Chem. Toxicol.* 1999; 22(4): 643-53.

Saraf, S., et al. "Antihepatotoxic activity of *Cassia occidentalis*." *Int. J. Pharmacog.* 1994; 32(2): 178-83.

Jafri, M. A., et al. "Hepatoprotective activity of leaves of *Cassia occidentalis* against paracetamol and ethyl alcohol intoxication in rats." *J. Ethnopharmacol.* 1999; 66(3): 355-61.

Bin-Hafeez, B., et al. "Protective effect of *Cassia occidentalis* L. on cyclophosphamide-induced suppression of humoral immunity in mice." *J. Ethnopharmacol.* 2001; 75(1): 13-18.

Sharma, N., et al. "In vitro inhibition of carcinogen-induced mutagenicity by *Cassia occidentalis* and *Emblca officinalis*." *Drug Chem. Toxicol.* 2000; 23(3): 477-84.

Picão preto (*Bidens pilosa*)

This rainforest plant has been documented with antioxidant and cellular protective actions. A research group in Taiwan reported that a picão preto extract was capable of protecting the liver of rats from various introduced toxins known to cause liver injury. This research group had previously demonstrated picão preto's anti-inflammatory actions in animals a year earlier. A Brazilian research group confirmed the anti-inflammatory activities in mice and attributed them to an immune modulation effect (noting the extract reduced the amount of pro-inflammatory immune cells in human blood in a previous study). In addition, other research demonstrated that a picão preto extract inhibited prostaglandin-synthesis and cyclooxygenase (COX) activities. Both are chemical processes in the body which are linked to inflammatory diseases. Picão preto was also documented to prevent hypertension in rats fed a high-fructose diet, and to lower the resulting (elevated) blood pressure and triglyceride levels. In hypertensive rats (including high dietary salt-induced hypertension), extracts of the plant significantly lowered blood pressure—without having an effect on heart rate and urine volume.

Abajo, C. "In vitro study of the antioxidant and immunomodulatory activity of aqueous infusion of *Bidens pilosa*." *J. Ethnopharmacol.* 2004 Aug; 93(2-3): 319-23.

Chang, C.L., et al. "The distinct effects of a butanol fraction of *Bidens pilosa* plant extract on the development of Th1-mediated diabetes and Th2-mediated air way inflammation in mice." *J. Biomed. Sci.* 2005; 12(1): 79-89.

Wu, L. W., et al. "Polyacetylenes function as anti-angiogenic agents." *Pharm. Res.* 2004 Nov;21(11):2112-9.

Dimo, T., et al. "Leaf methanol extract of *Bidens pilosa* prevents and attenuates the hypertension induced by high-fructose diet in Wister rats." *J. Ethnopharmacol.* 2002; 83(3): 183–91.

Usami E, et al. "Assessment of antioxidant activity of natural compound by water- and lipid-soluble antioxidant factor." *Yakugaku Zasshi.* 2004 Nov;124(11):847-50.

Chiang, Y. M., et al. "Metabolite profiling and chemopreventive bioactivity of plant extracts from *Bidens pilosa*." *J. Ethnopharmacol.* 2004 Dec;95(2-3):409-19.

Chin, H. W., et al. "The hepatoprotective effects of Taiwan folk medicine 'ham-hong-chho' [*Bidens pilosa*] in rats." *Am. J. Chin. Med.* 1996; 24(3–4): 231–40.

Gervão (*Stachytarpheta* sp)

This tropical herb contains a plant chemical called *verbascoside*. In laboratory studies, this powerful antioxidant has been documented with brain cell protective, antiviral, antibacterial, liver protective, heart protective, and antitumorous effects. A flavonoid in gervão called *scutellarein* has been documented with heart protective, anti-inflammatory and antiviral actions. Another flavonoid found in gervão called *hispidulin* been reported to have liver detoxifying actions and helps to normalize sticky blood. Testing the plant extract, researchers reported it demonstrated antacid and antiulcerous effects in mice stating it had a protective effect to the gastric tract by increasing intestinal motility, protecting against ulcers from various chemical agents, and inhibiting gastric secretion.

Alvarez, E., et al. "Inhibitory effects of leaf extracts of *Stachytarpheta jamaicensis* (Verbenaceae) on the respiratory burst of rat macrophages. *Phytother. Res.* 2004; 18(6): 457-62.

Penido, C., et al. "Anti-inflammatory and anti-ulcerogenic properties of *Stachytarpheta cayennensis* (L.C. Rich) Vahl." *J. Ethnopharmacol.* 2006 Mar; 104(1-2): 225-33.

Sheng, G. Q., et al. "Protective effect of verbascoside on 1-methyl-4-phenylpyridinium ion-induced neurotoxicity in PC12 cells." *Eur. J. Pharmacol.* 2002; 451(2): 119–24.

Ferrandiz, M. L., et al. "Hispidulin protection against hepatotoxicity induced by bromobenzene in mice." *Life Sci.* 1994; 55(8): PL145–50.

Schapoval, E. E., et al. "Anti-inflammatory and antinociceptive activities of extracts and isolated compounds from *Stachytarpheta cayennensis*." *J. Ethnopharmacol.* 1998; 60(1): 53–9.

Dabaghi-Barbosa, P., et al. "Hispidulin: antioxidant properties and effect on mitochondrial energy metabolism." *Free Radic. Res.* 2005; 39(12): 1305-15.

Qiusheng, Z., et al. "Effects of verbascoside and luteolin on oxidative damage in brain of heroin treated mice." *Pharmazie.* 2005; 60(7): 539-43.

Zhao, C., et al. "In vitro" protection of DNA from Fenton reaction by plant polyphenol verbascoside."

Biochim. Biophys. Acta. 2005 May 25; 1723(1-3): 114-23.

Liu, M. J., et al. "The effects of verbascoside on plasma lipid peroxidation level and erythrocyte membrane fluidity during immobilization in rabbits: a time course study." *Life Sci.* 2003 Jul; 73(7): 883-92.

Tayuya (*Cayaponia tayuya*)

Novel antioxidant chemicals have been discovered in tayuya and named *cayaponosides* (24 distinct cayaponosides have been discovered thus far). These phytochemicals have been documented to have antioxidant, anti-inflammatory and analgesic properties and, more recently, to have anticancerous potential. The National Cancer Center Research Institute in Tokyo, Japan reported that five cayaponosides in tayuya exhibited significant anti-tumor-promoter activity in screening tests. Another cucurbitacin found in tayuya, *cucurbitacin R*, has been studied extensively in Russia. There it is cited as a powerful adaptogen, preventing stress-induced alterations in the body. Other flavone phytochemicals in tayuya have been reported act as potent scavengers of free radicals, providing an antioxidant effect as well as protecting against damage induced by gamma-radiation.

Escandell, J. M., et al. "Dihydrocucurbitacin B, isolated from *Cayaponia tayuya*, reduces damage in adjuvant- induced arthritis." *Eur. J. Pharmacol.* 2006 Jan 26;

Recio, M. C., et al. "Anti-inflammatory activity of two cucurbitacins isolated from *Cayaponia tayuya* roots." *Planta Med.* 2004; 70(5): 414-20.

Anon., "Anti-tumor-promoter activity of natural substances and related compounds." Annual Report 1995. National Cancer Center Research Institute, Tokyo, Japan, 1996.

Konoshima, T., et al. "Inhibitory effects of cucurbitane triterpenoids on Epstein-Barr virus activation and two-stage carcinogenesis of skin tumor." *Biol. Pharm. Bull.* 1995; 18(2): 284–87.

Panosian, A., et al. "On the mechanism of action of plant adaptogens with particular reference to cucurbitacin R diglucoside." *Phytomedicine.* 1999 Jul; 6(3): 147-55.

Panosian, A. G., et al. "Action of adaptogens: cucurbitacin R diglucoside as a stimulator of arachidonic acid metabolism in the rat adrenal gland." *Probl. Endokrinol.* 1989 Mar-Apr; 35(2): 70-4.

Panosian, A. G., et al. "Effect of stress and the adaptogen cucurbitacin R diglycoside on arachidonic acid metabolism." *Probl. Endokrinol.* 1989 Jan-Feb; 35(1): 58-61.

Panosian, A. G., et al. "Cucurbitacin R glycoside—a regulator of steroidogenesis and of the formation of prostaglandin E2—a specific modulator of the hypothalamus-hypophysis-adrenal cortex system." *Biull. Eksp. Biol. Med.* 1987; 104(10): 456-7.

Dadaian, M. A., et al. "Prostaglandin E2 and F2 alpha and 5-hydroxyeicosatetraenoic acid levels in the blood of immobilized rats: effect of dihydrocucurbitacin D diglucoside." *Vopr. Med. Khim.* 1985 Nov-Dec; 31(6): 98-100.

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Manufactured By:
Raintree Nutrition, Inc.
3579 Hwy 50 East, Suite 222
Carson City, NV 89701
(800) 780-5902 (775) 841-4142
www.RaintreeNutrition.com



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