

Phyto Tick Defense

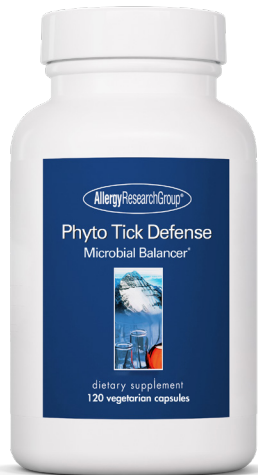
Microbial Balancer*

People who enjoy outdoor activities, such as hiking or camping, are often exposed to ticks and mosquitoes. Under optimal conditions, the body can address these threats by launching an appropriate immune response.*

For hundreds if not thousands of years, in traditional medicine cultures, mixtures of herbs, along with yeast beta-glucans, have been used to stimulate an immune response.* In modern times, scientists have been able to identify medicinal plants that support a healthy immune response to insect-borne microbes.* The combined ingredients in Phyto Tick Defense are designed to strengthen the immune system and to support cellular health throughout the body, based upon traditional use, and modern science.*

Key Features

- Supports rapid immune responses throughout the body.*
- Strengthens mucosal and endothelial barriers.*
- Protects cells and tissues from oxidative stress.*
- Encourages the growth of beneficial gut bacteria.*



#78280

120 vegetarian capsules

Supplement Facts

Serving Size	2 Capsules
Servings Per Container	60
Amount Per Serving	% Daily Value
Organic Cordyceps Powder (<i>Cordyceps sinensis</i>) (Mycelium)	250 mg †
Organic Lion's Mane (<i>Hericium erinaceus</i>) (Fruiting body)	250 mg †
Sweet Wormwood Powder (<i>Artemisia annua</i>) (Leaf and Stem)	150 mg †
Coptis Extract 4:1 (<i>Coptis chinensis</i>) (Rhizome)	150 mg †
Houttuynia Powder (<i>Houttuynia cordata</i>) (Whole Plant)	125 mg †
Cat's Claw 4:1 Extract (<i>Uncaria tomentosa</i>) (Inner Bark)	125 mg †
Beta Glucan 1,3/1,6 (from <i>Saccharomyces cerevisiae</i>) (Standardized to 85%)	125 mg †
† Daily Value not established.	

Suggested Use:
As a dietary supplement, 2 capsules one or two times daily with or without food, or as directed by a healthcare practitioner.

Other ingredients: Hydroxypropyl methylcellulose, stearic acid, silicon dioxide.



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Artemisia annua (sweet wormwood or *Artemisia*) is a botanical that has been used in traditional Chinese medicine for 2000 years and is now cultivated around the world.* The use of *Artemisia* is common in regions where insect-borne microbes pose major challenges, including Africa.* The bioactive substances in *Artemisia* include artemisinin and its derivatives, along with flavonoids and polyphenols. *Artemisia* supports innate immune responses as well as immunological memory.* This enables the immune system to respond quickly to threats that have been encountered in the past.* *Artemisia* also has potential neuroprotective effects.*



Houttuynia cordata (chameleon plant or *Houttuynia*) is well known in the traditional medicine systems of China, Southeast Asia and Northeast India.* Traditional healers use *Houttuynia* as a component of blood-building decoctions, particularly where insect-borne microbes are common.* *Houttuynia* contains several bioactive compounds that act in concert to support health, including houttuynin (decanoyl acetaldehyde), flavonoids (quercetin, hyperin, rutin), and myrcene, along with polysaccharides that support the microbiota and immune system.* *Houttuynia* extracts were shown to have immune-enhancing and antioxidant effects, with potential benefits for the spleen, lungs, oral cavity, and skin.*



Uncaria tomentosa (Cat's Claw) is a woody vine that is native to the Amazon and Central American rainforests.* It is prized by the indigenous people, and is commonly used for immune support in regions where mosquitoes are prevalent.* In response to immune challenges, cat's claw stimulates the production of white blood cells in bone marrow and increases their ability to engulf potential invaders.* Cat's claw contains alkaloids such as mitraphylline, along with antioxidants such as polyphenols and proanthocyanidins.* The alkaloid fractions help strengthen the endothelial lining of blood vessels, as evidenced by a reduction in paracellular permeability.* A healthy endothelial barrier reduces the leakage of foreign substances from the bloodstream into tissues.*



Coptis chinensis (Chinese goldthread) has long been used in traditional Chinese and Japanese medicines to support respiratory, digestive, and nervous system health.* The rhizome is valued for its antioxidant and immune-supportive properties.* With respect to insect-borne microbes, a survey of Japanese herbal medicines reported that *Coptis* was one of the most effective herbs.* *Coptis* is an excellent source of berberine, which may improve the intestinal barrier while providing anti-microbial benefits.* It also contains coptisine, which has neuroprotective effects.* Research suggests that the rhizome extracts may protect brain and

nerve cells from oxidative stress by strengthening cellular antioxidant systems.* This feature may be particularly helpful for individuals exposed to insect-borne microorganisms.*

Cordyceps sinensis (Cordyceps) is a type of fungus that serves as a natural regulator of insect populations in its native habitat.* Found in the alpine grasslands of the Tibetan Plateau, *Cordyceps* feeds on caterpillars and mature insects.* *Cordyceps* has been used for centuries as a traditional Chinese medicine with a reputation for maintaining vitality and immunity.* The constituents of *Cordyceps* include ergosterol (a vitamin D2 precursor) and cordycepin (3'-deoxyadenosine), a nucleoside that modulates cellular signaling pathways.* In mammalian cells, *Cordyceps* induces significant immune responses of macrophages.* At the same time, *Cordyceps* may protect the brain, lungs, and kidneys from cellular damage.* *Cordyceps* also contains polysaccharides that can improve the gut microbiota composition and function.*



Hericium erinaceus (Lion's Mane) is an edible and medicinal mushroom that supports mucosal, cellular, and humoral immunity.* It contains erinacines, hericenones, ergothioneine, beta-glucan, and other bioactive molecules.* Lion's Mane has been shown to improve microbial balance and modulate inflammation-related signaling pathways in the intestine.* Additionally, Lion's Mane increased the production of secretory immunoglobulin (SIgA), which constitutes the first line of defense in the intestinal epithelium.* SIgA forms a protective barrier between the outside environment and the interior of the body.* Lion's Mane also promotes the growth and myelination of neurons, and protects microglia from damage.* Microglia play an active role in host defense and tissue repair in the brain.* Supplementation with Lion's Mane has been shown to enhance sleep quality and mood in healthy adults.*



Beta-glucan (1,3-1,6) is a nutritional polysaccharide derived from yeast. Fungal (yeast and mushroom) beta-glucans are polymers with beta-1,3-1,6-linkages, and this specific structure is important for their immunomodulatory activities.* Yeast beta-glucans have been shown to boost immune responses to a variety of challenges.* They stimulate the activity of macrophages, granulocytes, monocytes and dendritic cells, all of which participate in immune surveillance and defense.* Additionally, yeast beta-glucans increase the production of cathelicidin and β -defensin, which are bioactive peptides that help recognize potential invaders.* As a further benefit, beta-glucan serves as a prebiotic (fermentable) fiber that improves gut microbial balance, a process associated with overall health.*



References available upon request.

Product Sheet Reference Page

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#78280 | 120 Vegetarian Capsules

- Horowitz RI, Freeman PR. *Int J Gen Med.* 2019;12:101-19.
- Krause PJ, et al. *Clin Infect Dis.* 2002;34:1184-91.
- Sanchez-Vicente S, et al. *mBio.* 2019;10 (5):e02055-19.
- Diuk-Wasser MA, et al. *Trends Parasitol.* 2016;32:30-42.
- Alesaeidi S, Miraj S. *Electron Physician.* 2016 Oct;8(10):3150-5.
- Bilia AR, et al. *Evid Based Complement Alternat Med.* 2014;2014:159819.
- Conroy AL, et al. *BMC Med.* 2021 Dec;19(1):1-2.
- Elfawal MA, et al. *PLoS One.* 2012 Dec 20;7(12):e52746.
- Feng J, et al. *Discov Med.* 2019 Mar;27(148):125-38.
- Feng X, et al. 2020 Dec;216:107650.
- Gugliandolo E, et al. *Front Neurol.* 2018 Jul 31;9:590.
- Hunt S, et al. *J Inflamm Res.* 2015;8:9.
- Islamuddin M, et al. *PLoS Negl Trop Dis.* 2015 Jan 8;9(1):e3321.
- Kim WS, et al. *Korean J Physiol Pharmacol.* 2015 Jan 1;19(1):21-7.
- Mueller MS, et al. *Trans R Soc Trop Med Hyg.* 2004;98(5):318-21.
- Munyangi J, et al. *Phytomedicine.* 2019 Apr;57:49-56.
- Ogwang PE, et al. *Trop J Pharm Res.* 2012;11(3):445-53.
- Qiang W, et al. *Neuroscience.* 2018;395:1-12.
- Septembre-Malaterre A, et al. *Int J Mol Sci.* 2020 Jan;21(14):4986.
- Shahrajabian MH, et al. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca.* 2020 Dec 22;48(4):1719-41.
- Shi Z, et al. *Pharmacological Res.* 2018;136:172-80.
- Trendafilova A, et al. *Foods.* 2020 Dec 30;10(1):65.
- Weathers PJ, et al. *World J Pharmacol.* 2014 Dec 9;3(4):39-55.
- Zhang Y, et al. *Front Cell Infect Microbiol.* 2021;11:22.
- Chen MY, et al. *Chin J Nat Med.* 2019 Mar;17(3):187-97.
- Cheng BH, et al. *Carbohydr Polym.* 2014 Mar 15;103:244-9.
- Dev V, et al. *WHO South East Asia J Public Health.* 2015;4(1):20-9.
- Hong SB, Lee CH. *Korean J Clin Lab Sci.* 2015;47(3):140-6.
- Hynniewta SR, Kumar Y. *Indian J Tradit Knowl.* 2008;7:581-6.
- Jiangang F, et al. *Chinese Med.* 2013 Aug 21;2013.
- Kim J, et al. *J Korean Soc Food Sci Nutr.* 2005;34(2):167-75.
- Kwon HD, et al. *Prev Nutr Food Sci.* 1996;1(2):208-13.
- Kumar M, et al. *Pharmacogn Rev.* 2014 Jan;8(15):22.
- Satthakarn S, et al. *Oral Dis.* 2015 May;21(4):512-8.
- Sekita Y, et al. *BioMed Res Int.* 2016 Jun 20;2016.
- Sekita Y, et al. *Biosci Biotechnol Biochem.* 2016 Jun 2;80(6):1205-13.
- Tapan S. *Asian J Appl Sci.* 2011;4:238-46.
- Shingnaisui K, et al. *J Ethnopharmacol.* 2018 Jun 28;220:35-43.
- Si NW, et al. *Southeast Asian J Trop Med Public Health.* 2017 May 1;48(3):616-27.
- Yadav AK. *J Parasit Dis.* 2011 Oct 1;35(2):190-4.
- Yang L, Jiang JG. *Pharm Biol.* 2009 Dec 1;47(12):1154-61.
- Zhu H, et al. *J Ethnopharmacol.* 2018 May 23;218:90-9.
- Allen-Hall L, et al. *J Ethnopharmacol.* 2010 Feb 17;127(3):685-93.
- Batiha GE, et al. *Appl Sci.* 2020 Jan;10(8):2668.
- Bletter N. *J Ethnobiol Ethnomed.* 2007 Dec 5;3:36.
- Eberlin S, et al. *Int Immunopharmacol.* 2005 Jul 1;5(7-8):1235-46.
- Goc A, Rath M. *Ther Adv Infect Dis.* 2016 Jun;3(3-4):75-82.
- Keplinger K, et al. *J Ethnopharmacol.* 1999;64:23-34.
- Lima-Junior RS, et al. *Nat Prod Commun.* 2013 Nov;8(11):1547-50.
- Montserrat-de la Paz S, et al. *J Ethnopharmacol.* 2015 Jul 21;170:128-35.
- Navarro Hoyos M, et al. *Molecules.* 2015 Dec 18;20(12):22703-17.
- Navarro Hoyos M, et al. *Antioxidants (Basel).* 2017 Feb 4;6(1):12.
- Pilarski R, et al. *J Ethnopharmacol.* 2006 Mar 8;104(1-2):18-23.
- Rojas-Duran R, et al. *J Ethnopharmacol.* 2012 Oct 11;143(3):801-4.
- Sandoval M, et al. *Phytomedicine.* 2002 May;9(4):325-37.
- Serrano A, et al. *Medicines (Basel).* 2018 Jul 16;5(3):76.
- Ulibarri G, et al. *F1000Res.* 2016;5:598.
- Williams JE. *Altern Med Rev.* 2001 Dec;6(6):567-79.
- Zhang Q, et al. *Review. J Ethnopharmacol.* 2015;173:48-80.
- Friedemann T, et al. *Evid Based Complement Alternat Med.* 2015;827308.
- Horowitz RI, Freeman PR. *Antibiotics.* 2020 Nov;9(11):725.
- Hou Q, et al. *Biomed Pharmacother.* 2019 Oct 1;118:109206.
- Lang L, et al. *Chem Biol Drug Des.* 2018;92(1):1324-32.
- Schinella GR, et al. *Fitoterapia.* 2002 Dec 1;73(7-8):569-75.
- Teklemichael AA, et al. *Malaria J.* 2020 Dec;19:1-0.
- Wang J, et al. *Pharm Biol.* 2019 Jan 1;57(1):193-225.
- Zhang Q, et al. *Food Chem Toxicol.* 2011 Jan 1;49(1):61-9.
- Zheng W, Luo D. *Int J Biosci.* 2012;2:11.
- Agrawal DG, Sandhu SS. *Indian J Biotechnol.* 2020;19:38-44.
- Ashraf SA, et al. *Molecules (Basel, Switzerland).* 2020;25(12):2735.
- Das G, et al. *Front Pharmacol.* 2021;11:602364.
- Elkhateeb WA, Daba G. *Asian J Nat Prod Biochem.* 2020 Jul 20;18(2).
- Fernandes EK, et al. *Exp Parasitol.* 2012 Mar 1;130(3):300-5.
- Govindula A, et al. *Eur J Pharmacol.* 2021 Jul 21:174364.
- Hsieh CF, et al. *Evid Based Complement Alternat Med.* 2017;2017:5632195.
- Lei J, et al. *Eur J Pharmacol.* 2018 Jan 5;818:110-4.
- Liu Y, et al. *Evid Based Complement Alternat Med.* 2015 Jan 1;2015:575063.
- Liu Z, et al. *Behav Brain Funct.* 2010 Dec;6(1):1-6.
- Lo HC, et al. *J Tradit Complement Med.* 2013 Jan;3(1):16-32.
- Jordan JL, et al. *Immunopharmacol Immunotoxicol.* 2008;30(1):53-70.
- Jung SJ, et al. *BMC Complement Altern Med.* 2019 Dec;19(1):1-8.
- Olatunji OJ, et al. *Fitoterapia.* 2018 Sep 1;129:293-316.
- Panda AK, Swain KC. *J Ayurveda Integr Med.* 2011 Jan;2(1):9.
- Shrestha B, et al. *J Mycol.* 2016 Feb 22;2016.
- Tan L, et al. *Phytother Res.* 2021 Mar;35(3):1284-97.
- Wang ZM, et al. *Food Chem.* 2011;125:637-643.
- Woolley VC, et al. *J Invertebr Pathol.* 2020 Nov 1;177:107480.
- Xiao G, et al. *Cell Immunol.* 2010 Jan 1;263(2):241-50.
- Ying M, et al. *Carbohydr Polym.* 2020 May 1;235:115957.
- Zhang Q, et al. *Carbohydr Polym.* 2021 Jul 16:118443.
- Friedman M. *J Agric Food Chem.* 2015 Aug 19;63(32):7108-23.
- Gutzeit C, et al. *Immunol Rev.* 2014 Jul;260(1):76-85.
- Halliwell B, et al. *FEBS Lett.* 2018 Oct;592(20):3357-66.
- Huang HT, et al. *Sci Rep.* 2021;11(1):6551.
- Kushairi N, et al. *Antioxidants (Basel).* 2019 Aug 1;8(8):261.
- Nagano M, et al. *Biomed Res.* 2010;31(4):231-7.
- Sheng X, et al. *Food Funct.* 2017;8(3):1020-7.
- Vigna L, et al. *Evid Based Complement Alternat Med.* 2019 Apr 18;2019.
- Wang LY, et al. *Molecules.* 2019 Jan;24(18):3317.
- Wu D, et al. *Carbohydr Polym.* 2019 Oct 15;222:114996.
- Xie XQ, et al. *Nutrients.* 2021 Mar;13(3):1008.
- Yim MH, et al. *Acta Pharmacol Sin.* 2007 Jun;28(6):901-7.
- Auinger A, et al. *Eur J Nutr.* 2013 Dec;52(8):1913-8.
- De Marco Castro E, et al. *Mol Nutr Food Res.* 2020 Mar 3:1901071.
- Dos Santos JC, et al. *Cell Rep.* 2019 Sep 3;28(10):3269-72.
- Li SS, et al. *Nat Commun.* 2018;9:751.
- Stier H, et al. *Nutr J.* 2014 Apr 28;13:38.
- Talbott SM, Talbott JA. *J Am Coll Nutr.* 2012 Aug;31(4):295-300.
- Talbott SM, et al. *Food Sci Nutr.* 2013 Jan;1(1):90-101.
- Vaclav V, Jana V. *World J Pathol.* 2019 Feb 23;8(2).
- Vetvicka V, Fernandez-Botran AR. *Helminthologia.* 2018; 55:177-84.
- Vetvicka V, Vetvickova J. *Pathol Discov.* 2020;8(2).
- van der Meer JWM, et al. *Mol Immunol.* 2015 Nov;68(1):40-4.
- Wang H, et al. *Food Funct.* 2020;11(12):10386-96.