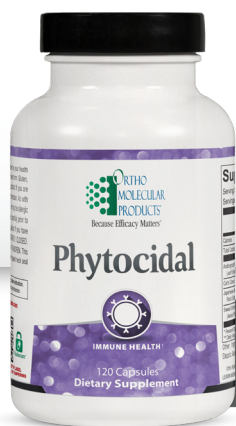


Phytocidal



CLINICAL APPLICATIONS

- Supports the Body's Defenses Against Immune Challenges
- Promotes Healthy Microbial Balance and Spirochete Load
- Helps Maintain Normal Inflammatory Balance
- Provides Antioxidant Support
- Often Used in Conjunction with Cryptolepis

IMMUNE HEALTH

Phytocidal, a blend of powerful botanicals for those with high spirochete load, is formulated to aid in reducing immune burden and provide potent antioxidant support to help fend off microbial challenges. Each two-capsule serving of Phytocidal contains *Andrographis*, cat's claw, Japanese knotweed and sweet wormwood, which are botanicals well-studied for their strong microbial-balancing properties.

Overview

Phytocidal provides a blend of potent botanicals to promote healthy microbial balance and immune support for those with high spirochete load. Spirochetes are bacteria that have evolved a unique spiral shape and rotational motility that is highly effective at moving through tissue barriers. They use their chemotactic sensors to locate nutrients and employ toxin avoidance behaviors.¹ Spirochetes are often spread by tick bites and accompanied by associated microbes that can make recovery especially challenging.¹

Andrographis paniculata Leaf Extract†

Andrographis paniculata is a plant that has been used in Asian medicine for centuries for its broad range of health-promoting properties. Traditionally, the plant has been used as an infusion, decoction or powder, either alone or in combination with other herbs. In a study examining 158 patients, a standardized preparation of *Andrographis* dried extract administered for five days significantly supported immune response while decreasing throat irritations and nasal secretions.² An additional study examining the effects of *Andrographis* found that andrographolide administration significantly improved CD4+ lymphocyte count in patients with immune challenges.³ *Andrographis* has also been reported to provide strong antioxidant support due to its ability to activate

highly protective antioxidant reactions, including superoxide dismutase, catalase and glutathione-S-transferase.⁴ In recent years, *Andrographis* has emerged as a potent activator of Nrf2.⁵ Studies have shown that, when compared to other phenolic compounds, 60 mg of *Andrographis* induced the highest activation of Nrf2.⁶ This activation helps reduce oxidative stress, quench free radicals, maintain endothelial health and support mitochondrial function.⁶⁻⁸ In another study, *Andrographis* demonstrated strong activity against spirochetes.¹⁰

Cat's Claw†

Cat's claw is an herbal medicine derived from the bark of the *Uncaria tomentosa* vine, and it is used for its inflammatory support and immune-balancing effects. It has demonstrated support for fever and fatigue by suppressing TNF-alpha synthesis and raising CD57 counts.⁹ In other studies, cat's claw has shown strong activity against spirochetes.¹⁰

Japanese Knotweed†

Resveratrol, the most well-researched stilbene, is found in many plants and red wines. Studies of resveratrol have found it enhances the potential of antioxidant and detoxification activity through Nrf2 activation.¹³ Other studies have linked resveratrol to improving blood sugar balance, maintaining normal inflammatory balance and reducing oxidative stress.^{12,13} Japanese knotweed (*Polygonum cuspidatum*) has also demonstrated strong activity against spirochetes as well as other associated microbes.^{10,16}

† These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Sweet Wormwood[†]

Sweet wormwood (*Artemisia annua*) is a fern-like plant commonly found throughout Asia, and artemisinin is its active constituent. Artemisinin is a sesquiterpene lactone, which is a special compound shown to have strong microbial-balancing properties. It is known to interfere with microbial metabolism by causing structural changes to unfriendly organisms that prevent them from maturing in the body. This effect is facilitated by the production of free radicals and reactive aldehydes within the microbes that disrupt their growth.^{14,15} In other studies, artemisinin demonstrated potent activity against spirochetes and associated microbes.^{10,16}

Directions

2 capsules per day or as recommended by your health care professional.

Does Not Contain

Gluten, yeast, artificial colors and flavors.

Cautions

Do not consume this product if you are pregnant or nursing. Consult your physician for further information.

Supplement Facts ^{v2}		
Serving Size 2 Capsules Servings Per Container 60		
	Amount Per Serving	% Daily Value
Calories	5	
Total Carbohydrate	1 g	<1%*
Andrographis (<i>Andrographis paniculata</i>) Leaf Extract (Standardized to contain 30% Andrographolides)	600 mg	**
Cat's Claw (<i>Uncaria tomentosa</i>) Extract (Bark)	400 mg	**
Japanese Knotweed (<i>Polygonum cuspidatum</i>) Root Extract (Standardized to contain 20% <i>trans</i> -Resveratrol)	200 mg	**
Sweet Wormwood (<i>Artemisia annua</i>) Extract (Aerial Portion) (Standardized to contain 5% Artemisinin)	100 mg	**
* Percent Daily Values are based on a 2,000 calorie diet. ** Daily Value not established.		

Other Ingredients: Hypromellose (Natural Vegetable Capsules), Stearic Acid, Magnesium Stearate and Silicon Dioxide.

ID# 174120 120 Capsules

References

1. Haake, DA. Spirochetes. In: *Encyclopedia of Microbiology*. 3rd ed. Schaechter M, ed. Elsevier; 2009:278-292. <https://doi.org/10.1016/b978-012373944-5.00230-3>.
2. Cáceres DD, Hancke JL, Burgos RA, Sandberg F, Wikman GK. Use of visual analogue scale measurements (VAS) to assess the effectiveness of standardized *Andrographis paniculata* extract SHA-10 in reducing the symptoms of common cold. *Phytomedicine* 1999;6:217-223.
3. Calabrese C, Berman SH, Babish JG, et al. A phase I trial of andrographolide in HIV positive patients and normal volunteers. *Phytother Res* 2000;14:333-338.
4. Verma N, Vinayak M. Antioxidant action of *Andrographis paniculata* on lymphoma. *Mol Biol Rep* 2008;35:535-540.
5. Wong SY, Tan MG, Wong PT, Herr DR, Lai MK. Andrographolide induces Nrf2 and heme oxygenase 1 in astrocytes by activating p38 MAPK and ERK. *J neuroinflammation* 2016;13(1):251.
6. Wu KC, McDonald PR, Liu J, Klaassen CD. Screening of natural compounds as activators of the keap1-nrf2 pathway. *Planta medica* 2014;80(1):97.
7. Rajagopal S, Kumar RA, Deevi DS, Satyanarayana C, Rajagopalan R. Andrographolide, a potential cancer therapeutic agent isolated from *Andrographis paniculata*. *J Exp Ther Oncol* 2003;3(3):147-58.
8. Mishra SK, Sangwan NS, Sangwan RS. Phcog Rev.: *Andrographis paniculata* (Kalmegh): A Review. *Pharmacognosy Reviews* 2007;1(2):283-98.
9. *LiverTox: Clinical and Research Information on Drug-Induced Liver Injury* [Internet]. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases; 2012-. Cat's Claw. [Updated 2019 Feb 18]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK548323/>
10. Feng J, Leone J, Schweig S, Zhang Y. Evaluation of Natural and Botanical Medicines for Activity Against Growing and Non-growing Forms of *B. burgdorferi*. *Front Med* (Lausanne) 2020;7:6.
11. Kode A, Rajendrasozhan S, Caito S, Yang SR, Megson IL, Rahman I. Resveratrol induces glutathione synthesis by activation of Nrf2 and protects against cigarette smoke-mediated oxidative stress in human lung epithelial cells. *Am J Physiol Lung Cell Mol Physiol* 2008;294(3):L478-L488.
12. Su HC, Hung LM, Chen JK. Resveratrol, a red wine antioxidant, possesses an insulin-like effect in streptozotocin-induced diabetic rats. *Am J Physiol Endocrinol Metab* 2006;290(6):E1339-E1346.

13. Martín AR, Villegas I, La Casa C, de la Lastra CA. Resveratrol, a polyphenol found in grapes, suppresses oxidative damage and stimulates apoptosis during early colonic inflammation in rats. *Biochem Pharmacol* 2004;67(7):1399-1410.
14. Dhingra V, Vishweshar Rao K, Lakshmi Narasu M. Current status of artemisinin and its derivatives as antimalarial drugs. *Life Sci* 2000;66(4):279-300.
15. Krishna S, Bustamante L, Haynes RK, Staines HM. Artemisinins: their growing importance in medicine. *Trends Pharmacol Sci* 2008;29(10):520-527.
16. Zhang Y, Alvarez-Manzo H, Leone J, Schweig S, Zhang Y. Botanical Medicines *Cryptolepis sanguinolenta*, *Artemisia annua*, *Scutellaria baicalensis*, *Polygonum cuspidatum*, and *Alchornea cordifolia* Demonstrate Inhibitory Activity Against *Babesia duncani*. *Front Cell Infect Microbiol* 2021;11:624745.