



immune boost

- Provides Support for Immune Challenges
- Strengthens Immune Function
- Maintains Normal Inflammatory Balance

This product includes a powerful combination of key nutrients and botanical extracts that provide support for immune challenges. This product boosts immune defenses by providing nutrients, such as L-lysine, vitamins A and C, pantothenic acid, vitamin B12, and zinc. This product provides a synergistic blend of botanical extracts, including black elderberry, astragalus, echinacea, and andrographis, all of which have been used traditionally for their clinically effective immune-modulating properties.

Overview

Our body's immune system is a complex and dynamic defense system that comes to our rescue at the first sign of exposure to an outside invader. The dynamic nature of the immune system means that all factors that affect health need to be addressed in order for it to function at peak performance. The immune system is very sensitive to nutrient deficiencies. While vitamin deficiencies can compromise the immune system, consuming immune enhancing nutrients and botanicals can support and strengthen your body's immune response. This product's synergistic formula significantly boosts immune cell function, including antibody response, natural killer (NK) cell activity, thymus hormone secretions, and T-cell activation. This product also helps soothe throat irritations and nasal secretions, and it maintains normal inflammatory balance by increasing antioxidant levels throughout the body.

Immune Nutrition Base[†]

This product contains the synergistic nutrient blend of zinc, vitamin C, vitamin A, L-lysine and pantothenic acid, which each play a major role in maintaining a healthy, functioning immune system.

Zinc[†]

Zinc is a mineral that works synergistically with vitamin A in activating thymic factor, a thymus hormone with vital immune-supporting properties.¹ Maintaining optimal zinc levels also helps maintain helper T-cell lymphocyte function, NK cell activity, macrophage function, and antibody production.²

Vitamin C[†]

Vitamin C is well known for its ability to support immune response. Vitamin C concentrations decline rapidly in the body during periods of stress. Dietary intake is therefore crucial during immune challenges.³ Vitamin C has been found to be helpful in supporting specific components of the immune system, including NK cell activity and lymphocyte function.³ Vitamin C also provides antioxidant support by protecting cells against reactive oxygen species that are generated during normal inflammatory response.³

Vitamin A[†]

Vitamin A helps support mucous membranes. When vitamin A is lacking, mucus-producing cells are replaced by keratin-producing cells, and the membranes become tough and more vulnerable to organisms. Vitamin A is a critical immune-supporting nutrient.⁴ Vitamin A also supports the immune system by stimulating white blood cell function and increasing antibody response.⁴

L-Lysine[†]

L-lysine is an essential amino acid that cannot be synthesized in the body on its own. Lysine must be derived from protein sources in the diet in order for the body to function properly. Many biological functions require lysine, including boosting immune defense. A study conducted in China examined the immunological effects of lysine. Of 88 families included in the study, half received wheat flour fortified with 3 g of lysine per kilogram of flour while the other half received wheat flour without fortification. Those given the fortified flour showed improved immune function versus the placebo group, and the experimental group specifically showed an increase in CD3 T-cells, IgG, IgA, and IgM.⁵

Pantothenic Acid (Vitamin B5)[†]

Pantothenic acid (vitamin B5) is a water-soluble B complex vitamin. D-calcium pantothenate is a heat-stable form of B5. About 85% of pantothenic acid in food occurs as a component

of coenzyme A (CoA). As a component of CoA, pantothenic acid is essential for the production of energy from carbohydrates, fats and protein. Maintaining optimal pantothenic acid levels is crucial for supporting immune system energy, thymic function and healthy white blood cell levels.^{6,7}

Black Elderberry Extract†

Black elderberry (*Sambucus nigra*) has a long history of traditional use among herbalists and is native to Europe, Northern Africa, and Western and Central Asia. Elderberry preparations range from expressed juice to syrup, tea decoction, powdered extract, and powdered extract in the form of lozenges or capsules.⁸ The bioactive components of elderberry include the flavonoid anthocyanin.⁹ This product is standardized to include black elderberry extract with 13% anthocyanins. Black elderberry preparations have also been shown to enhance immune cell killing potential by supporting healthy cytokine production, including IL-8 and IL-10, the cellular pathways used to eliminate foreign invaders.¹⁰

Astragalus membranaceus Root Extract†

Astragalus membranaceus is native to northern China and has been traditionally used to strengthen the immune system.¹¹ The root of *A. membranaceus* is one of the two commonly used species in traditional Chinese medicine. Research has demonstrated the immune-regulating effects of astragalus, which include boosting T-dependent antigens, lymphokine-activated killer (LAK) cells and macrophage activity.¹² Additional studies have demonstrated that *A. membranaceus* root extract supports immune response by boosting T3, T4 and T4/T8 cell ratios.¹³

Echinacea purpurea Extract†

Echinacea purpurea is a perennial herb that has been used for centuries in Native American medicine. Current research has supported echinacea's clinical applications as this botanical has been the subject of more than 300 scientific studies.^{14,15} Echinacea activates multiple aspects of immune function, including enhancing leukocyte and granulocyte counts; activating neutrophils, monocytes, and eosinophils; and solubilizing immune complexes.¹⁶ Echinacea also diminishes hyaluronidase, a compound which increases connective tissue permeability.¹⁶

Andrographis paniculata Leaf Extract†

Andrographis paniculata is a plant that has been used in Asian medicine for centuries. Traditionally, the plant has been used as an infusion, decoction or powder, either alone or in combination with other herbal plants. In a study examining 158 patients, a standardized preparation of *A. paniculata* dried extract administered for five days significantly supported immune response while decreasing throat irritations and nasal secretions.¹⁷ An additional study examining the effects of *A. paniculata* found that andrographolide

administration significantly improved CD4+ lymphocyte count in patients which immune challenges.¹⁸ *A. paniculata* 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.¹⁹

Directions†

For immediate immune support: 1-2 capsules per hour or as recommended by your health care professional.

For immune maintenance: 2 capsules per day or as recommended by your health care professional.

Do not exceed 2 capsules every hour.

Does Not Contain

Gluten, yeast, artificial colors or flavors.

Cautions

Vitamin A is fat-soluble and can accumulate to potentially harmful levels over time. Do not exceed recommended dosage. Consult your physician before use. Do not consume this product if you are pregnant or nursing.

Supplement Facts ^{ve}		
Serving Size 2 Capsules Servings Per Container 30		
	Amount Per Serving	% Daily Value
Vitamin A (from 15,000 IU as Palmitate, Natural Beta Carotene)	4,500 mcg	500%
Vitamin C (as Ascorbic Acid USP, Acerola Fruit Juice Concentrate Powder)	300 mg	333%
Vitamin B12 (as Methylcobalamin)	2.5 mcg	104%
Pantothenic Acid (as d-Calcium Pantothenate USP)	10 mg	200%
Zinc (as Albion® Minerals Zinc Bisglycinate Chelate)	4 mg	36%
Astragalus (<i>Astragalus membranaceus</i>) Root Extract	250 mg	*
European Elder (<i>Sambucus nigra</i>) Berry Extract (Standardized to contain 13% Anthocyanins)	250 mg	*
Andrographis (<i>Andrographis paniculata</i>) Leaf Extract (Standardized to contain 30% Andrographolides)	200 mg	*
<i>Echinacea purpurea</i> Extract (Flowering Aerial Parts) (Standardized to contain 4% phenols)	100 mg	*
L-Lysine Hydrochloride USP	100 mg	*
Acerola Fruit Juice Concentrate Powder (Standardized to contain 17% Vitamin C)	25 mg	*

* Daily Value not established.

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

References

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