

# Virammune

## Immune Health

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

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. Virammune's synergistic formula significantly boosts immune cell function including antibody response, natural killer (NK) cell activity, thymus hormone secretions, and T-cell activation. Virammune also helps soothe throat irritations and nasal secretions, and maintains normal inflammatory balance by increasing antioxidant levels throughout the body.

## Immune Nutrition Base

Virammune 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. Maintaining optimal zinc levels also helps maintain helper T-cell lymphocyte function, NK cell activity, macrophage function, and antibody production.

## 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. Vitamin C has been found to be helpful in supporting specific components of the immune system including NK cell activity and lymphocyte function. Vitamin C also provides antioxidant support by protecting cells against reactive oxygen species that are generated during normal inflammatory response.

### Benefits of Virammune

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

## 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. Vitamin A also supports the immune system by stimulating white blood cell function and increasing antibody response.

## 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



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function properly. Many biological functions require lysine including boosting immune defense. A study conducted in China examined the immunological effects of lysine. Of eighty-eight families included in the study, half received wheat flour fortified with 3 g of lysine per kilogram of flour, the other half received wheat flour without fortification. Those given the fortified flour showed improved immune function, versus the placebo group, specifically showing an increase of CD3 T-cells, IgG, IgA, and IgM.

### **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.

### **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. The bioactive components of elderberry include the flavonoid anthocyanin. Virammune 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.

### **Astragalus Root Extract**

Astragalus Membranaceus Root Extract *Astragalus membranaceus* is native to northern China and has been traditionally used to strengthen the immune system. 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, and lymphokine-activated killer (LAK) cells and macrophage activity. Additional studies have demonstrated that *A. membranaceus* root extract supports immune response by boosting T3, T4 and T4/T8 cell ratios.

### **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. Echinacea activates multiple aspects of immune function including enhancing leukocyte and granulocyte counts, activating neutrophils, monocytes, and eosinophils and solubilizing immune complexes. Echinacea also diminishes hyaluronidase, a compound which increases connective tissue permeability.

### **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. An additional study examining the effects of *A. paniculata* found that andrographolide administration significantly improved CD4+ lymphocyte count in patients with immune challenges. *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.

### **Recommended Use:**

**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.**

\*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.

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