

Herbal Biotic

Herbal Biotic is formulated with ingredients that act synergistically to create a well-balanced immune response. The vitamins and minerals in the formula are well known for their roles in supporting normal immune function, while the herbs and bioflavonoids provide high levels of antioxidant activity and support the body's natural defenses. This formula is particularly effective in promoting upper respiratory and sinus health.

Vitamin A

Vitamin A is known as an anti-inflammatory vitamin because of its critical role in enhancing immune function. Vitamin A is involved in the development of the immune system and plays regulatory roles in cellular immune responses and humoral immune processes. Vitamin A has demonstrated a therapeutic effect in the treatment of various infectious diseases and is critical for healthy lung tissue.

Vitamin C

Vitamin C contributes to immune defense by supporting various cellular functions of both the innate and adaptive immune system. Vitamin C supports epithelial barrier function against pathogens and promotes oxidant-scavenging activity. Vitamin C accumulates in phagocytic cells, such as neutrophils, and can enhance chemotaxis, phagocytosis, generation of reactive oxygen species, and ultimately microbial killing.

The role of vitamin C in lymphocytes has been shown to enhance differentiation and proliferation of B- and T-cells. Vitamin C **deficiency** results in impaired immunity and higher susceptibility to infections. Furthermore, supplementation with vitamin C appears to be able to both prevent and treat respiratory and systemic infections.

Zinc

Zinc affects multiple aspects of the immune system. Zinc is crucial for normal development and function of cells mediating innate immunity, neutrophils, and Natural Killer cells. Macrophages also are affected by zinc deficiency. Phagocytosis, intracellular killing, and cytokine production all are affected by zinc deficiency.

Berberine HCl

Berberine has been shown to fight harmful microorganisms, including bacteria, viruses, fungi and parasites. Additionally, It has been shown to have potent antioxidant and anti-inflammatory effects.

***Forsythia suspensa* Fruit extract**

Forsythiae suspensa Fruit extract, as a traditional Chinese medicine, has been widely used both as a single herb and in compound prescriptions in Asia, mainly due to its heat-clearing and detoxifying effects. Modern pharmacology has proved *F. suspensa* possesses various therapeutic effects, both such as anti-inflammatory, antibacterial and antiviral activities. The antiviral effects of *F. suspensa* mainly focused on influenza A (H1N1) virus, respiratory syncytial virus (RSV) and infectious bronchitis virus (IBV).

***Lonicera japonica* Flower extract**

Lonicera japonica is a honeysuckle species commonly used in traditional Chinese medicine, having a variety of anti-inflammatory and immune-enhancing properties. It has direct anti-bacterial and anti-viral properties, and the diversity of chemical constituents found in *L. japonica* allows it to support general host resistance to pathogens. In general, it is used to treat fever and infections where there is pain and swelling, particularly sore throats and upper respiratory tract infections.

Garlic Bulb Extract

The benefits of garlic to health have been proclaimed for centuries; however, only recently have *Allium sativum* and its derivatives been proposed as promising candidates for maintaining the homeostasis of the immune system. Recent studies indicate that garlic appears to enhance the functioning of the immune system by stimulating certain cell types, such as macrophages, lymphocytes, natural killer (NK) cells, dendritic cells, and eosinophils, making garlic an all-around immune enhancer.

Myrrh Gum Powder

Myrrh has long been used in traditional Chinese medicine and Ayurvedic medicine. Myrrh is primarily used as an antiviral and antibiotic. It stimulates white blood cells to help your immune system fight infections, and additionally has direct antimicrobial effects.

***Echinacea purpurea* Herb Extract**

Echinacea purpurea is a perennial medicinal herb with **important immunostimulatory and anti-inflammatory** properties, especially the alleviation of cold symptoms. There are numerous studies that suggest innate immunity is enhanced by administration of the plant and that the immune system is strengthened against pathogenic infections through activation of the neutrophils, macrophages, polymorphonuclear leukocytes (PMN), and natural killer (NK) cells. For this reason, it can be suitable for prevention against and treatment of various infectious diseases such as infections of the upper and lower respiratory systems, wound infections, and chronic pelvic infections.

Citrus Bioflavonoid Complex

Increasing our intake of bioflavonoids helps to prevent free radicals from causing harm in the body. The antioxidant and anti-inflammatory benefits of citrus bioflavonoids have been shown to support metabolic, circulatory, cognitive and joint health. Citrus bioflavonoids support balanced immune cell activities for better immune response, and support for respiratory health.