

Mycel Immune Plus™ – 90 Veg Caps

TECHNICAL SUMMARY

Mycel Immune Plus™ is a combination of our specialized mushroom blend and astragalus extract that has been specifically formulated to support a healthy immune system.* Our potent blend of eight “super” mushrooms has been optimized for bioactive polysaccharides that are characteristic of mushrooms, known as beta-glucans.* Mushroom beta-glucans have been studied for their remarkable ability to support a balanced immune system response.* Astragalus has been included to complement the immune-supporting properties of our unique blend of mushrooms.*

Structure of main components: This product is a blend of astragalus root extract and our blend of the mycelial biomass of eight organically grown mushrooms.

Mushroom Blend: Optimized mycelia biomass blend composed of 25% Turkey Tail (*Trametes versicolor*), 25% Sun mushroom (*Agaricus blazei*), 20% Maitake (*Grifola frondosa*), 10% Cordyceps (*Cordyceps sinensis*), 5% *Phellinus linteus*, 5% Lion's Mane (*Hericium erinaceus*), 5% Reishi (*Ganoderma lucidum*), and 5% Shiitake (*Lentinula edodes*). Mushroom mycelia are known to have naturally occurring polysaccharides including β-glucans. β-Glucans is the common name given to a group of chemically heterogeneous polysaccharides belonging to a group of biologically active natural compounds called biological response modifiers.* Structurally, β-glucans vary in terms of backbone structure, frequency and length of branching, molecular weight, higher-order conformations, and solubility.

Astragalus: This product has an ethanol/water extract of *Astragalus membranaceus* roots standardized to 70% polysaccharides.

Allergen and Additive Disclosure: Not manufactured with yeast, wheat, gluten, soy, corn, milk, egg, fish, shellfish, or tree nut ingredients. Produced in a GMP facility that processes other ingredients containing these allergens. Substrate media for mycelial growth is organic brown rice.

Delivery Form: Vegetable capsules.

ROLE AS NUTRIENT/FUNCTION

Mushroom Blend: β-Glucans represent highly conserved structural components of cell walls in fungi, yeasts, grains, and seaweeds. They are known to be important natural immunomodulators, notably by stimulating cellular immunity.* β-glucans are said to bind to specific receptors that activates cells of the innate (non-specific) immune system that constitute the first line of host defense.* In addition, β-glucan binding to immune cells activate intracellular processes characterized by the formation of free radicals (hydrogen peroxide, super oxide radical, NO), increasing the content and activity of hydrolytic and metabolic enzymes, and signaling processes leading to activation of other immune cells and the secretion of substances reinforcing the immune system’s ability to respond to external aggressions.*

Astragalus: This plant has been used in Chinese traditional herbalism for centuries. Its root is known to possess a variety of active constituents including more than 40 saponins such as polysaccharides, astragaloside, several flavonoids including isoflavones, pterocarpan, multiple trace

Supplement Facts

Serving Size 1 Veg Capsule

Amount Per Serving

Organic Mushroom Blend (Optimized Mycelial BioMass) [Blend of <i>Trametes versicolor</i> (Turkey Tail), <i>Agaricus blazei</i> (Sun Mushroom), <i>Grifola frondosa</i> (Maitake), <i>Bionectria ochroleuca</i> (<i>Cordyceps sinensis</i> Mushroom), <i>Phellinus linteus</i> , <i>Hericium erinaceus</i> (Lion's Mane), <i>Ganoderma lucidum</i> (Reishi) and <i>Lentinula edodes</i> (Shiitake)] (Has naturally occurring Polysaccharides)	200 mg*
Astragalus Root Extract (<i>Astragalus membranaceus</i>) (min. 70% Polysaccharides)	200 mg*

* Daily Value not established.

Other ingredients: Hypromellose (cellulose capsule), Microcrystalline Cellulose, Silicon Dioxide and Magnesium Stearate (vegetable source).

- **Healthy Immune System Response***
- **Mushroom Blend With Astragalus Extract**

SUGGESTED USAGE: Take 1 capsule 1 to 2 times daily.

minerals, amino acids, and coumarins. Polysaccharides found in astragalus have been extensively studied notably for their immunomodulatory properties. In laboratory experiments, astragalus is able to increase the cellular production of compounds necessary for the normal function of the immune system when reacting to external stimulations, it can also contribute to the activation immune cells that are indispensable to a normal immune function.*

NATUROKINETICS®

Liberation

This product in its vegetable capsules disintegrate within 60 minutes when using a USP water disintegration test.

Little is known about the absorption, distribution, metabolism, and elimination of mushroom and astragalus polysaccharides in humans. In addition to polysaccharides both the optimized mycelial biomass and astragalus extract found in this product are constituted of multiple other compounds that have specific absorptions, distributions, metabolism, and elimination.

Absorption

Mushroom Blend: How β-glucans mediate their effects after oral ingestion in humans remain to be defined. Most β-glucans are not absorbed in the GI tract, but are consumed by the intestinal microbiota, and their immunomodulatory properties may be partly attributed to a microbe-dependent effect similar to that of prebiotics. Some experiments in animal models suggest that some β-glucans can bind directly to immune cells present in GI tract and to intestinal epithelial cells and reach the general

circulation via immune cell transportation. Animal data suggest that less than 0.5% of β -glucans reaches the systemic blood circulation.

Astragalus: Polysaccharides from astragalus appear to support the growth of healthy microbiota.* Preclinical data suggest that some of the compounds found in astragalus roots reach the general circulation with various bioavailabilities depending on the compound's structure. Animal data suggest that the oral absorption of these compounds is poor.

Distribution

Mushroom Blend: Based on animal and *in vitro* data, β -glucans taken up by intestinal immune cells are transported to various sites throughout the body including lymph nodes, spleen, and bone marrow.

Astragalus: Preclinical data suggest that some compounds found in astragalus roots are distributed in all body tissues including the lung, liver and, brain.

Metabolism

Mushroom Blend: Based on animal and *in vitro* data, immune cells carrying β -glucans slowly degrade them, most likely via oxidative pathway, and release bioactive smaller β -glucans that will be taken up by circulating immune cells and be carried at the surface of these cells where they can exert their immunomodulatory function.*

Astragalus: In a way similar to mushroom β -glucans, polysaccharides derived from astragalus can be carried at the surface of immune cells. Some compounds found in astragalus roots are metabolized in the liver via hydrolysis, glucuronidation, sulfation.

Elimination

Mushroom Blend: Not known.

Astragalus: Some compounds found in astragalus roots are partially eliminated in urine and feces.

CLINICAL VALIDATION

- Astragalus is one of the pillars of traditional Chinese herbalism.
- Mushroom mycelia are also widely used in traditional Chinese herbalism.
- The suggested usage for this product is based on the known immunomodulatory properties of mushroom β -glucans and astragalus as evaluated by *in-vitro* experiments and studies performed using animal models.

SAFETY INFORMATION

Tolerability: Both astragalus and mushroom mycelia are typically well tolerated. However due to their known immunomodulatory properties, caution of use is suggested for individuals with conditions affecting the immune system.

Contraindications: None known, as a precaution, use under medical supervision while pregnant and/or nursing.

INTERACTIONS

Drug Interactions: Theoretically, astragalus and β -glucans might interact with cyclophosphamide, azathioprine, basiliximab, cyclosporine, daclizumab, muromonab-CD3, mycophenolate, tacrolimus, sirolimus,

prednisone, other corticosteroids, recombinant interleukine-2, interferon-1.

Supplement Interactions: None known.

Interaction with Lab Tests: Beta-glucans may cause a transient increase in the number of white cells.²

STORAGE

Store in cool, dry, environment in a tightly sealed container.