

ImmunoBerry™ Liquid

*Elderberry, astragalus & mushroom extracts to support immune function**

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ImmunoBerry™ Liquid provides immune support in a pleasant tasting liquid ideal for both children and adults.* Specified herbs, mushrooms, and natural compounds, like the ones found in ImmunoBerry™ Liquid, have been shown to support proper immune functions such as natural killer (NK) cell activity, cytokine synthesis, and expression, as well as the T- and B-cell mediated responses necessary for a strong immune defense.* Research suggests that the bioactive constituents from these compounds show significant improvements in conditions such as influenza, respiratory tract infections, cancer prevention, and various viral and bacterial infections.¹⁻²⁵

Elderberry (*Sambucus nigra*)

Elderberry, commonly referred to as European elder, is grown in most parts of Europe, North Africa, West Asia, and now the U.S., and nearly every part of the plant is utilized medicinally, as dietary supplements, or for culinary purposes.⁵ The flowers and berries of *Sambucus nigra* are most often used medicinally and contain a variety of flavonoids which have been found to possess a variety of biochemical actions, including antioxidant anti-inflammatory, antiviral, anti-carcinogenic and immunologic properties.⁵⁻⁶ Research demonstrates that of all fresh fruits or berries elderberry measures as one of the highest in antioxidant capacity, and is one of the most commonly used botanicals for medicinal purposes in the world.⁶ In a meta-analysis *Sambuca nigra* supplementation was found to significantly attenuate upper respiratory symptoms and may be an alternative to prescription medications for influenza, the common cold, and viral infections of the upper respiratory tract.¹ An *in vitro* study examining extracts from American-cultivated elderberries on microglial cells showed remarkable antioxidant properties by suppressing interferon-gamma induced reactive oxygen species and P-ERK1/2 expression.⁶ In addition to its medicinal properties it has a pleasant taste, rendering it very useful in creating liquid herbal extracts that are suitable for children.

Astragalus Root (*Astragalus membranaceus*)

Astragalus membranaceus and related species are native to China and considered one of the most important and widely utilized adaptogenic herbs in Traditional Chinese Medicine (TCM). In TCM, astragalus is commonly found in mixtures with other herbs and is "used as an immune stimulant, antioxidant, diuretic, antidiabetic, hepatoprotectant, antiviral, expectorant, and anti-cancer tonic for numerous conditions and disorders."⁴ Extracts made from the roots of *Astragalus membranaceus* have been shown to promote functions in both the innate and acquired immune responses.⁷ Human and animal *in vitro* studies have demonstrated its abilities to induce monocyte activation, migration and maturation, reverse iNOS expression, and inhibit cytokine productions by suppressing MAPK and NF-κB signaling pathways. Moreover, it has been shown to stimulate T-cell mitosis, increase antibody response and lymphocyte development, activate human CD4+ and CD8+ T cells, and regulate balance of Th1/Th2 cytokines.⁷ Additionally, in immunosuppressive mice, astragalus preparations promoted NK cell activity and improved B-lymphocyte proliferation,³ and *astragalus polysaccharide* has been demonstrated to, directly and indirectly, inhibit RNA virus replication, inhibiting hepatitis A virus proliferation in both *in vitro* and *in vivo* animal models.⁸

Wild Cherry Bark (*Prunus serotina* spp.)

Cherry includes members of the *Prunus* genus, which contains several species that have been used both as food and medicine. Cherries have been found to contain extensive polyphenolic compounds that may have a number of beneficial biological activities, including antioxidant, anticancer, and anti-inflammatory properties.⁹⁻¹⁴ In an *in vitro* animal model, the bioactive compounds from wild cherry extract significantly decreased markers of oxidative damage, nitrite levels, and IL-1β & TNF-α mRNA secretion.¹¹

Traditionally, American black cherry has been used for common colds, fever, mouth infections, diarrhea, malaria, irritating cough, sore throat, and bronchitis due to its high content of phenolic compounds that possess a high antioxidant capacity and have been shown to promote smooth muscle relaxation and have vasodilatory effects.^{10,12-14} In addition to its extensive medicinal use, cherry imparts a pleasant taste into an herbal extract, syrup or elixir, making it particularly useful for children.

Shiitake mushroom (*Lentinula edodes*)

Shiitake mushrooms, thought to have originated in Japan and China, have been cultivated for over 1,000 years and can be traced back to the Song Dynasty (960-1127 A.D.). Shiitake is one of the most popular edible mushrooms in the world and has rapidly increased its application for medicinal purposes. It was traditionally used for immune system stimulation, cholesterol-lowering, and antiaging. More recent research has focused its attention on the potential of *Lentinula edodes* to be used as an anti-cancer, anti-tumor, antibacterial, antiviral, antifungal, antioxidant, and anti-inflammatory agent.¹⁵⁻²² In both human and animal *in vitro* studies, lentinan has been shown to modulate the immune system through selective induction of inflammasome and cytokine expression as well as activation of natural killer and T-helper cells.^{17, 20}

Maitake mushroom (*Grifola frondosa*)

Extracts of maitake mushroom, and particularly the beta-glucan polysaccharide constituent, have been associated with immunomodulatory and immunostimulatory activity in pre-clinical studies, and are hypothesized to exert anti-tumor, anti-cancer, and antioxidant effects as a result of these immune properties.^{16,23} Cells exposed to beta-glucans found in *Grifola frondosa* enhanced the production of T-helper cells, cytokines IL-1, IL-4, IL-6, IL-10, TNF- α , and INF- γ compared to controls²³ and strongly stimulated both the cellular and humoral immune reactions.¹⁶

Beta 1,3 1,6 Glucan

Beta-glucan is a soluble fiber derived from the cell walls of algae, bacteria, fungi, yeast, and plants. It is commonly used for its immuno-modulating and cholesterol-lowering effects.²⁴⁻²⁵ Beta-glucans have also been shown to have wound healing properties, help with diabetes, and aid in weight loss.²⁶⁻²⁷ Vaccine research shows that beta-1,3 glucan from fungal cell walls produce robust humoral and cellular immune responses when exposed to antigens.²⁸

Supplement Facts

Serving Size 1 mL (approx. 35 drops)
Servings Per Container about 118

Amount Per Serving	% Daily Value
Elderberry (<i>Sambucus nigra</i>)(fruit)	200 mg *
Astragalus (<i>Astragalus membranaceus</i>)(root)	100 mg *
Shiitake Mushroom (<i>Lentinula edodes</i>)(fruiting body)	75 mg *
Maitake Mushroom (<i>Grifola frondosa</i>)(fruiting body)	75 mg *
Wild Cherry (<i>Prunus spp.</i>)(bark)	50 mg *
Beta 1,3/1,6 Glucan	25 mg *

*Daily Value not established.

Other Ingredients: Vegetable glycerine, deionized water, natural raspberry and berry flavor.

Recommended Use:

As a dietary supplement, take 1 mL (approx. 35 drops) one to three times per day, or as directed by your health care practitioner.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/techsheet-references/immunoberry-references.pdf>

*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.

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities, appropriate monitoring, including liver function tests (LFT) is recommended.

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at www.designsforhealth.com.