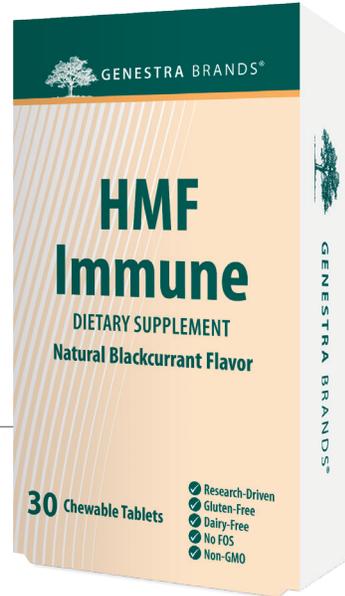




GENESTRA
BRANDS®

HMF Immune

PROBIOTIC SUPPLEMENT



Great-tasting immune support formula*

- Supports upper respiratory tract health in children and physically active adults*
- Offers 30 billion CFU per dose from a combination of five proprietary strains, plus vitamins C and D
- Once-daily chewable tablet available in a delicious natural blackcurrant flavor

Genestra HMF Immune combines proprietary probiotics with vitamins C and D to provide targeted support for the immune system. Each convenient, once-daily chewable tablet provides a blend of five research-driven probiotic strains from both the *Lactobacillus* and *Bifidobacterium* genera. As nearly 80% of the body's immunologically active cells are located in gut-associated lymphoid tissue, an important connection has been demonstrated between the intestines and the immune system. In addition to supporting gastrointestinal health, HMF Immune provides BI-04, a strain that has been shown in a clinical trial to support upper respiratory tract health in physically active adults. Similarly, it offers CUL-60, CUL-21, CUL-34 and CUL-20, which were demonstrated in a clinical trial to support upper respiratory tract health in children when combined with vitamin C. To further help maintain immune function, HMF Immune contains vitamins C and D. Vitamin C supports the immune system by regulating lymphocyte proliferation, natural killer cell activity and immunoglobulin production, while vitamin D helps control T cell activation, cytokine release and phagocytosis in macrophages. Research demonstrates that vitamins C and D may be especially effective in maintaining immune function in the respiratory tract.*

SUPPLEMENT FACTS		
Serving Size 1 Tablet		
Servings per Container 30		
EACH TABLET CONTAINS		%DV
Vitamin C (as ascorbic acid)	100 mg	111%
Vitamin D ₃ (as cholecalciferol)	25 mcg (1000 IU)	125%
Probiotic Consortium	30 billion CFU	†
<i>Lactobacillus acidophilus</i> (CUL-60 & CUL-21)		
<i>Bifidobacterium animalis</i> subsp. <i>lactis</i> (CUL-34) & <i>Bifidobacterium bifidum</i> (CUL-20)		
<i>Bifidobacterium animalis</i> subsp. <i>lactis</i> (BI-04)		
† Daily Value (DV) not established		

Other Ingredients: Xylitol, blackcurrant fruit extract, sorbitol, natural blackcurrant flavor, silica, magnesium stearate

Recommended Dose

Chew one tablet daily with a meal or as recommended by your healthcare practitioner.

Size
30 Chewable Tablets

Product Code
10365



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*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

HMF Immune

Scientific Rationale:

The human intestinal tract contains more than 400 bacterial species.¹ This microflora composition can be altered by a number of factors, including diet, occasional stress, certain medications, aging and travel.¹ When the microflora balance is affected in the intestines, common gastrointestinal complaints can occur, including mild bloating and gas.²

Probiotics are live microorganisms that support gastrointestinal health and contribute to a healthy microflora composition.^{1*} Studies have shown that they mediate microbial colonization and support the growth of beneficial bacteria in the intestines.^{1*} Probiotics accomplish this by mediating intestinal pH and strengthening the epithelial barrier.^{3*} They mediate the integrity of tight junctions and increase mucin release, which in turn regulates permeability and reduces microbial adherence to cells.^{3,4*}

Additionally, approximately 80% of the body's immunologically active cells are located in gut-associated lymphoid tissue, demonstrating an important interaction between the intestines and the immune system.^{5*} Preclinical research suggests that probiotics may directly mediate the activation of immune cells, the release of cytokines, and IgA antibody-mediated responses in the mucosa.^{6*}

Bifidobacterium animalis subsp. *lactis* (BI-04) is a proprietary probiotic strain that was investigated in a randomized, double-blind, placebo-controlled trial for its effects on immune health.⁷ Physically active adults were randomized to consume a placebo or probiotic supplement (containing 2.0x10⁹ CFU of BI-04) daily for 150 days.⁷ Participants recorded their physical activity and respiratory health throughout the study via a web-based questionnaire.⁷ When compared to the placebo, daily supplementation with BI-04 significantly promoted upper respiratory immune health.^{7*}

A combination of HMF probiotics and vitamin C was also reported to support schoolchildren's respiratory immune health in a six-month, randomized, double-blind, placebo-controlled study.^{8*} Children were randomized to either a placebo or probiotic and vitamin C tablet group (12.5 billion CFU of *Lactobacillus acidophilus* CUL-60 and CUL-21, *Bifidobacterium animalis* subsp. *lactis* CUL-34, *Bifidobacterium bifidum* CUL-20 and 50 mg of vitamin C).⁸ Participants consumed one tablet daily for six months and their respiratory health was evaluated by a pediatrician every two months.⁸ Compared with the placebo

group, upper respiratory tract health and immune function was significantly better supported in children that received the probiotic and vitamin C supplement.^{8*} An additional clinical trial also reported that daily supplementation with 25 billion CFU of these probiotic strains (plus 2 g of fructooligosaccharides) significantly regulated the production of cytokines, including IL-6 and IL-1 β .^{9*} This further demonstrates the potential of these probiotics to beneficially modulate the immune response.^{9*}

Vitamin C is a water-soluble antioxidant in the plasma and cellular fluid.^{10*} It directly scavenges reactive oxygen and nitrogen species, which can damage cells and disrupt normal cellular function.^{11*} Vitamin C further protects cells by regenerating other antioxidants, such as glutathione and vitamin E.^{11*} It supports the immune system by regulating lymphocyte proliferation, natural killer cell activity, immunoglobulin production and histamine release.^{11*} In addition, neutrophils contain vitamin C to protect against reactive oxygen species produced during phagocytosis.^{11*}

The vitamin D receptor is found on most immune cells, including T cells, B cells, and macrophages, demonstrating an important interaction between vitamin D and the immune system.^{12*} Vitamin D levels also vary depending on the season, with highest levels present during summer and lowest levels present during winter; this pattern also resembles the seasonal variation in immune system health.¹² Low vitamin D status has also been associated with decreased upper respiratory immune function, while vitamin D supplementation has been shown to have beneficial effects on the function of a variety of immune cells - including dendritic cells, macrophages, and T cells.^{13-15*} Research demonstrates that vitamin D mediates the proliferation of T and B cells, increases the phagocytic activity of macrophages, and promotes a healthy cytokine balance to promote normal immune function.^{16*} One controlled clinical trial reported that daily supplementation with 1000 IU of vitamin D for 3 months significantly increased plasma vitamin D levels and regulated the production of IL-2, IL-4, IL-6, and IFN- γ .^{17*}

HMF Immune was specifically formulated to support the immune system. Each convenient, once-daily chewable tablet provides a blend of five proprietary probiotic strains from both the *Lactobacillus* and *Bifidobacterium* genera. Clinical trials have demonstrated the beneficial effects of these strains in supporting upper respiratory tract health.^{8,9*} To further help maintain immune function, HMF Immune also provides vitamins C and D.^{11,17*}

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