GENESTRA BRANDS®

# HMF Intensive 500

## PROBIOTIC FORMULA

**500 billion CFU per dose**

- Highest concentration of CFU available in Canada
- Contains probiotics to supplement the normal intestinal microbiota following antibiotic therapy
- Helps improve symptoms of irritable bowel syndrome (IBS) within six weeks†
- Offers five proprietary strains from a combination of *Lactobacillus* and *Bifidobacterium* genera
- Convenient, once-daily powder format
- Potency guaranteed through expiration
- Backed by over 20 years of clinical evidence

HMF Intensive 500 is our most concentrated probiotic formula yet, providing 500 billion CFU daily from a combination of five human-sourced, research-driven strains. Included in this blend are three strains of *Lactobacilli* and two strains of *Bifidobacteria* to promote colonization in both the small and large intestines.[1] These proprietary strains were selected based on their high quality, viability, strong epithelial adherence and naturally high tolerance to stomach acid.[2] HMF probiotics have been evaluated for their effectiveness in clinical trials over the past 15 years and are some of the most studied probiotic cultures in the world.[3-8] Research has reported that strains present in HMF Intensive 500 contribute to a favourable gut flora, supplement the normal intestinal microbiota following antibiotic therapy, and help improve symptoms of irritable bowel syndrome (IBS) in adults and children over 11 years, such as bloating, satisfaction with bowel habits, and days with pain, within six weeks.[3-5] Provided in a convenient, once-daily powder format, HMF Intensive 500 is an easy way to support daily gastrointestinal health.


**EACH SACHET (5 g) CONTAINS:**

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| **Probiotic Consortium** | 500 billion CFU |
| *Bifidobacterium animalis* subsp *lactis* (CUL-34) | 285 billion CFU |
| *Bifidobacterium bifidum* (CUL-20) | 15 billion CFU |
| *Lactobacillus salivarius* (CUL-61) | 100 billion CFU |
| *Lactobacillus acidophilus* (CUL-60) | 50 billion CFU |
| *Lactobacillus acidophilus* (CUL-21) | 50 billion CFU |

Non-Medicinal Ingredients: Potato maltodextrin

**Recommended Dose**
**For IBS relief: Adults and Adolescents (over 11 years); For all other uses: Adults, Adolescents and Children (3 years and older):** In a glass, add water or milk to one sachet of HMF Intensive 500 and mix. Take once daily with meals, at least two to three hours before or after taking antibiotics, or as recommended by your healthcare practitioner.

**Product Size:** 30 - 5g Sachets of Powder (150 g)

**Product Code:** 10199

NPN 80070542

NON GMO · DAIRY FREE · GLUTEN FREE · VEGAN · NO FOS

†Adults and children 11 years and older

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GENESTRA BRANDS®

# HMF Intensive 500 PROBIOTIC FORMULA

## Scientific Rationale:

*The human intestinal tract contains more than 400 bacterial species.[1] The distribution of these microorganisms throughout the gut is not uniform, with the concentration and diversity of species increasing towards the distal end of the GI tract.[2] In addition, certain species preferentially colonize specific areas of the digestive system.[3] Compared to other strains, Lactobacilli survive better in acidic environments, and are one of few species present in the stomach and duodenum.[3] In contrast, Bifidobacteria are found in larger numbers in the colon, where they play a role in fermentation and complex carbohydrate digestion.[3]*

*The composition of the gut microflora can be altered by a number of factors, including diet, stress, antibiotic use, digestive disorders, aging and travel.[1] These factors may cause an imbalance in the intestines, wiping out the beneficial bacteria and allowing pathogenic bacteria to multiply.[1] This can lead to common gastrointestinal complaints, including bloating and gas.[4] In particular, antibiotic therapy disrupts the normal microflora composition, and can result in bacterial overgrowth, diarrhoea and antibiotic resistance.[1] Additionally, irritable bowel syndrome (IBS) is characterized by abdominal pain, discomfort when defecating, and bowel habit changes.[5] Individuals with IBS have an altered intestinal microflora composition, which leads to improper absorption of bile acids in the colon, and increased secretion of fluid and mucous through the mucosa. In turn, this can result in diarrhoea.[5]*

*Probiotics are live microorganisms that support gastrointestinal health and contribute to a healthy microflora composition.[1] Studies have shown that they support the growth of beneficial bacteria in the intestines, while limiting the proliferation of pathogenic bacteria.[1] They prevent pathogenic bacteria from colonizing the gastrointestinal tract by reducing the pH and stimulating the production of antimicrobial peptides in the intestine.[6] In addition to decreasing bacterial survival, probiotics strengthen the epithelial barrier.[6] They mediate the integrity of tight junctions and increase mucin release, which in turn regulates permeability and prevents pathogens from adhering to cells.[6,7] This course of action decreases the movement of bacteria from the intestines into circulation.[8] These effects may be especially useful to restore the normal flora after antibiotic use.[1] Similarly, probiotics may benefit individuals with IBS by decreasing gas formation in the colon, mediating colonic transit, and conjugating bile acids, which reduces both the secretion of water in the colon and changes in mucosal permeability.[9]*

*HMF Intensive 500 is formulated using GENESTRA BRAND's proprietary Lactobacillus and Bifidobacterium probiotic consortium – microorganisms that have been used in a wide body of clinical research.[10-15] Studies demonstrate that these strains effectively supplement the normal intestinal microbiota following antibiotic therapy and improve bowel habit satisfaction and quality of life, while decreasing the number of days with pain in adults with IBS.[11-13]*

*In one randomized, double-blind, placebo-controlled trial, HMF probiotics were found to modulate the microflora response to antibiotics.[11] Participants were randomly divided into three groups, with everyone receiving antibiotic therapy for seven days.[11] In addition, participants received placebo from days 1-15 (group one), placebo from days 1-7 and probiotics from days 8-15 (group two), or probiotics from days 1-15 (group three).[11] Each probiotic capsule was taken daily with food and contained $2.5x10^{10}$ CFU from a combination of two strains of Lactobacillus acidophilus (CUL-60 and CUL-21) and two strains of Bifidobacterium bifidum (CUL-34 and CUL-20).[11] Participants provided fecal samples on days 1 (baseline), 7, 12, 17 and 27, which were analyzed for bacterial counts.[11] After seven days of antibiotic therapy, significant increases in the number of facultative bacteria were found in the samples of participants in group one.[11] The level of these bacteria was also significantly higher at day 27, suggesting that antibiotics can have long-term effects on regrowth populations.[11] In contrast, although antibiotics significantly increased the level of facultative bacteria in group two after seven days, their counts were significantly lower at day 27.[11] Similarly, no significant changes in gut flora composition were observed in group three, apart from an increase in the number of total anaerobes at day 27 when compared to day 7.[11] Therefore, antibiotic therapy significantly altered the gut flora of participants (as demonstrated by an increase in total facultative anaerobes).[11] In contrast, HMF probiotic supplementation helped to decrease the overgrowth of these populations.[11] The study authors concluded that probiotic supplementation may be especially beneficial in mediating the regrowth of bacteria when consumed in conjunction with antibiotic therapy, rather than simply post-antibiotics.[11]*

*(Scientific Rationale continued on next page)*

*Similarly, a double-blind, placebo-controlled trial reported that HMF probiotics mediated antibiotic resistance.[12] All participants received antibiotics on days one through seven.[12] In addition, one participant group received probiotics from days 1-21, while group two received a placebo supplement.[12] Two fecal samples were collected before the use of antibiotics to determine the average bacterial composition at baseline (day 1).[12] Fecal samples were also collected on days seven and 35, four weeks after the completion of the antibiotics.[12] Each probiotic capsule was taken once daily and contained $2.5\times10^{10}$ CFU from a combination of two strains of Lactobacillus acidophilus (CUL-60 and CUL-21) and two strains of Bifidobacterium spp. (CUL-34 and CUL-20).[12] After seven days of antibiotic therapy, both groups reported changes in the level of total bacterial and facultative anaerobic populations, demonstrating the susceptibility of the microbiotas to antibiotics; however, the probiotic group experienced less disruption in their microflora composition.[12] Specifically, the placebo group had significantly decreased Lactobacilli and increased Candida albicans counts after antibiotics, while these effects were not observed in the probiotic group.[12] When comparing the microflora compositions of the two groups, the probiotic group reported significantly decreased Candida albican levels at day seven, as well as fewer total facultative anaerobes and Enterobacteriaceae at day 35.[12] Furthermore, the number of patients developing amoxicillin-resistant Enterococci between days one and 35 was significantly higher in the placebo group; no significant changes were observed in the probiotic group.[12] Therefore, HMF probiotic supplementation decreased the degree of microflora disruption as well as the incidence and number of antibiotic-resistant bacterial strains after the regrowth period.[12]*

*In an eight-week long, double-blind, randomized, placebo-controlled study involving 52 adults with IBS, supplementation with a combination of four HMF probiotic strains significantly decreased symptoms of IBS.[13] Participants were randomized to either the placebo or probiotic capsule group (25 billion CFU from Lactobacillus acidophilus CUL-60 and CUL-21, Bifidobacterium animalis subsp. lactis CUL-34, and Bifidobacterium bifidum CUL-20) and consumed one capsule daily for eight weeks.[13] Participants scored their IBS symptoms (including symptom severity score, abdominal pain, bloating, days with pain, satisfaction with bowel habits, and quality of life) at baseline and every two weeks during the supplementation period, as well as two weeks later to determine potential effects after supplementation had ceased.[13] When compared to baseline values, all six measures significantly improved after eight weeks of supplementation – including a 22% decrease in days with intestinal discomfort, 32% improvement in satisfaction with bowel habits, and 30% improvement in quality of life scores.[13] When compared to placebo values, satisfaction with bowel habits significantly improved after six weeks, while mean change in symptom severity score significantly improved after both six and eight weeks of probiotic supplementation.[13] Similarly, when compared to the placebo, quality of life significantly improved after eight weeks, while days with pain improved after 10 weeks of probiotic intake.[13] Therefore, HMF probiotic strains helps improve IBS symptoms in adults.[13]*

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