ProbioMax Daily DF™

Clinical Applications

- Maintain Healthy Intestinal Microecology
- Support the Natural Immune Response
- Support Bowel Regularity
- Support Balance of Healthy Flora During/Post-Antibiotic Therapy
- Support Lactose Tolerance

ProbioMax Daily DF™ is a vegetarian, gluten-free, four-strain probiotic totaling 30 billion CFU per vegetable capsule, packaged in nitrogen-purged blister packs to assure viability. Each strain has clinically proven health benefits, proven safety, acid and bile resistance, adherence to the human intestinal mucosa, survival/activity in the gastrointestinal tract.

All Xymogen formulas meet or exceed cGMP quality standards.

Discussion

HOWARU™ *Biff* (Bidfidobacterium lactis HN019): Discovered in the feces of infants in 1899, bifidobacteria are known to play a key role in the human microflora throughout life. Bifidobacterium lactis HN019 was born out of a five-year project during which internationally renowned researchers screened more than 2000 strains and identified it as having the best probiotic potential based upon its resistance to bile and acidity in vitro. Medical and scientific experts are confident bifidobacterium lactis HN019 is a safe strain for humans and does not contribute to antibiotic resistance. The strain has been shown to adhere in high numbers to cultured intestinal epithelial cells, giving it a better opportunity to modulate immunity. Following administration of this specific strain, bifidobacterium lactis HN019 and lactobacillus were recovered in human feces. Furthermore, less harmful bacteria were present, demonstrating G.I. tract survival and the possibility that bifidobacterium lactis HN019 may help preserve or restore healthy intestinal microbiotia. International studies on middle-aged to elderly people showed bifidobacterium lactis HN019 increases NK cells' cytotoxic activity and phagocytic activity of peripheral blood mononucleocytes and does not cause inflammation. In a year-long, double-blind, placebo-controlled trial (n=600), children, age 1 to 3, who had received this strain (along with galacto-oligosaccharides) had improved immunity, iron status, and growth.

Lactobacillus acidophilus (L. acidophilus La-14): This common inhabitant of the human mouth, intestinal tract, and vagina, has diverse health benefits. Phenotypic and genotypic methods have confirmed that, among six subspecies, the strain present in this formula is A1 L. acidophilus, a strain of human origin that is deposited in the American Type Culture Collection as SD5212. In vitro studies demonstrate a good indication that L. acidophilus La-14 has excellent adhesion to human epithelial cell lines (HT-29), limiting the ability of enteric pathogens to colonize. The strain has shown inhibition of common bacterial strains in vitro, and in the intestinal tracts of mice, re-establishment of the population of lactobacillus and bifidobacterium after antibiotic therapy. According to studies, L. acidophilus La-14 shifts the immune system to the Th1 response (induced IL-12 and moderately induced TNF-α in vitro) and also degrades oxalate 100%. This strain is vancomycin-sensitive.

Lactobacillus plantarum (Lactobacillus planarum Lp-115): L. plantarum Lp-115 is a strain isolated from plant material. This safe strain is frequently found in high numbers in lactic acid fermented foods such as olives and sauerkraut. In vitro studies have shown that L. plantarum Lp-115 is extremely resistant to low pH conditions, survives the presence of bile at duodenal concentrations, and has excellent adhesion to epithelial cell lines. In vitro this strain either inhibited adhesion or displaced a variety of common pathogens. The strain degraded oxalates 40%. In vitro studies support the notion that the strain shifts the immune response to the Th 1 type. L. plantarum Lp-115 reduced gut inflammation in animal models. Human studies indicated stimulation of specific immunity (IgG). This strain, as the other strains present, does not appear to contribute to antibiotic resistance.

Bifidobacterium longum (Bifidobacterium longum B1-05) B. longum B1-05, originally isolated from an unknown source, has been deposited in the American Culture Collection as SD5206. Well accepted as safe for human consumption, B.longum B1-05 is resistant to low pH and bile salts and is well-suited to the intestinal environment. It is sensitive to vancomycin and is not known to cause antibiotic resistance transfer.

Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 30

	Amount Per Serving	%Daily Value
HOWARU Bifido (*Bifidobacterium lactis* HN019)	15 Billion CFU*	**
Proprietary Blend *Lactobacillus acidophilus* La-14 *Lactobacillus plantarum* Lp-115 *Bifidobacterium longum* BI-05	15 Billion CFU*	**

** Daily Value not established.

Other Ingredients: Inulin, cellulose, magnesium stearate and silica.

* Colony-Forming Unit

Dosing:

Take one capsule, once a day, with water, or take as directed.

Storage:

Store in a cool, dry place. Refrigerate if desired.

References:

1. Zhou, J. S., Q. Shu, K. J. Rutherfurd, J. Prasad, M. J. Britles, P. K. Gopal, and H. S. Gill. 2000. Safety assessment of potential probiotic lactic acid bacteria strains *Lactobacillus rhamnosus* HN001, *Lb. acidophilus* HN017, and *Bifidobacterium lactis* HN019 in BALB/c mice. *Int. J. Food Microbiol*. 56:87-96. [PMID: 10857928]
2. Arunachalam, K., H. S. Gill, and R. K. Chandra. 2000. Enhancement of natural immune function by dietary consumption of *Bifidobacterium lactis* (HN019). *Eur. J. Clin. Nutr*. 54:263-267.
3. Chiang, B. L., Y. H. Sheih, L. H. Wang, C. K. Liao, and H. S. Gill. 2000. Enhancing immunity by dietary consumption of a probiotic lactic acid bacterium (*Bifidobacterium lactis* HN019): optimization and definition of cellular immune responses. Eur. J. Clin. Nutr. 54:849-855.
4. Gill, H., K. J. Rutherfurd, and M. L. Cross. 2001. Dietary probiotic supplementation enhances natural killer cell activity in the elderly: an investigation of age-related immunological changes. *J. Clin. Immunol*. 21:264-271.
5. Gill, H., K. J. Rutherfurd, M. L. Cross, and P. K. Gopal. 2001. Enhancement of immunity in the elderly by dietary supplementation with the probiotic Bifidobacterium lactis HN019. *Am. J. Clin. Nutr*. 74:833-839.
6. Gill, H. S. 1999. Potential of using dietary lactic acid bacteria for enhancement of immunity. Dialogue 32:6-11.
7. Gill, H. S., A. J. Darragh, and M. L. Cross. 2001. Optimizing immunity and gut function in the elderly. *J. Nutr. Health Aging* 5:80-91.
8. Gill, H. S., K. J. Rutherfurd, J. Prasad, and P. K. Gopal. 2000. Enhancement of natural and acquired immunity by Lactobacillus rhamnosus (HN001), *Lactobacillus acidophilus* (HN017) and *Bifidobacterium lactis* (HN019). *Br. J. Nutr*. 83:167-176.
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10. Gopal, P. K., J. Prasad, J. Smart, and H. S. Gill. 2001. In vitro adherence properties of *Lactobacillus rhamnosus* DR20 and Bifidobacterium lactis DR10 strains and their antagonistic activity against an enterotoxigenic Escherichia coli. *Int. J. Food Microbiol*. 67:207-216.

Caution:

Consult a licensed healthcare practitioner prior to use. Keep out of reach of children.

Additional References available upon request

*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.

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