

ProSynbiotic

A Synergistic Blend of Proprietary Probiotic Strains and Prebiotic Fibers to Support Gut Flora and Overall Intestinal Health

Fermented food as a part of human diet isn't new. Some of these products date back 5,000 years. But despite their long presence on our menu, we're just beginning to understand the role they and the helpful bacteria in them play in human health. We know gut bacteria can significantly impact how the body works, and how we process nutrients. Our "good" bacteria have a mutually beneficial relationship with us: they get food and shelter, and we get a complex array of services ranging from vitamin synthesis to immune system modulation.

The bacteria in ProSynbiotic are designed to help maintain a healthy, balanced gut environment. The *Lactobacillus*, *Bifidobacterium*, and yeast inhabit different environments within the gastrointestinal tract, and together are designed as a comprehensive solution for balancing this diverse ecosystem. To maintain these populations and support our native colonies, ProSynbiotic provides inulin and galactooligosaccharides (GOS), prebiotic fibers that are indigestible to us but are used by our good bacteria for food.

This blend provides the basis for maintaining a healthy gut, so it is especially useful when gut microbes are challenged by internal or external factors. People who travel, take some prescription medications, need digestive support, are under stress, or who do not eat fermented foods regularly may find ProSynbiotic useful in maintaining a healthy, balanced gut microbiome.†

Clinically documented strains that work synergistically with prebiotic fibers

- ***Lactobacillus acidophilus* (LA-5®)**—*Lactobacillus* bacteria, in general, are found in the small intestine and have a long history of use in the fermentation of dairy products, meats, and vegetables. They produce compounds our body can use (like short chain fatty acids) and acidify their environment, making it more hospitable for them and less welcoming for other bacteria. In addition to acid production the LA-5 strain has been evaluated for its ability to interfere with the communication between other types of bacteria, thus promoting a healthy balance of microbes. The LA-5 strain was also among several other *Lactobacilli* that improved outcomes in constipated subjects, as well as those with lactose intolerance.†
- ***Lactobacillus paracasei* ssp. *paracasei* (L. casei 431®)**—This strain of lactic-acid-producing bacteria adheres to the intestinal tract and tolerates bile, important characteristics necessary to support the natural gut environment. This strain has been studied in humans and mice for its ability to support the gut during challenges, and for its ability to help maintain the body's natural immune response.†
- ***Bifidobacterium lactis* (BB-12®)**—*Bifidobacteria* are normally found in the colon, acidify their environment, and are very tolerant of both acidic conditions and environments that contain bile. *Bifidobacteria* use a range of carbohydrates for energy (including GOS) that provide a significant competitive advantage. *Bifidobacteria* don't produce gas and they can make a variety of water soluble vitamins. *Bifidobacteria* represent between 3% and 6% of the native microflora and vary depending on lifestyle (diet /exercise) and age. The numbers of this microbe tend to decline with age. Oral *Bifidobacteria* have been shown to temporarily colonize the gut, competing with other bacteria to effectively support the natural bacterial balance.†

Please copy for your patients.

GF This product contains less than 10 parts per million of gluten per serving size or less than 20 parts per million per the suggested use listed on each product label.

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



Introduced in 2010

GF

Content:

90 capsules

Suggested Use: Three capsules per day, or as directed.

Supplement Facts:

Serving Size: 3 capsules
Servings per Container: 30

| | Amount per Serving | %DV |
|---|--------------------|------|
| Calories | 8 | |
| Total Carbohydrate | 1.8 g | <1%* |
| Probiotic Blend | 280 mg | |
| <small><i>S. boulardii</i>, <i>L. paracasei</i>, <i>L. casei</i> 431®, <i>L. acidophilus</i> LA-5®, and <i>Bifidobacterium</i>, BB-12® (4 billion cfu).</small> | | |
| Inulin | 1 g | |
| Galactooligosaccharide (GOS) (milk) | 100 mg | |

*Percent Daily Values (DV) are based on a 2,000-calorie diet.

Other ingredients: Maltodextrin, gelatin, water, colors, calcium stearate, and sorbitan monostearate.

Special Information: Store in a cool, dry place. Although research varies, our strains seem to work best when taken after a meal.

Sold through health care professionals.

Whole Food Philosophy

Our founder, Dr. Royal Lee, challenged common scientific beliefs by choosing a holistic approach of providing nutrients through whole foods. His goal was to provide nutrients as they are found in nature—in a whole food state where he believed their natural potency and efficacy would be realized. Dr. Lee believed that when nutrients remain intact and are not split from their natural associated synergists—known and unknown—bioactivity is markedly enhanced over isolated nutrients. Following this philosophy, even a small amount of a whole food concentrate will offer enhanced nutritional support, compared to an isolated or fractionated vitamin. Therefore, one should examine the source of nutrients rather than looking at the quantities of individual nutrients on product labels.



800-558-8740 | standardprocess.com

ProSynbiotic

- ***Saccharomyces cerevisiae* var. *boulardii***—A yeast isolated from fruit skins. Historically, this microbe was used by indigenous people in Cambodia, Laos, and Vietnam to support normal stool consistency. In the gut, this yeast supports the growth of some bacteria and inhibits others through competition and environmental modification of the gut.[†]
- **Inulin**—A soluble, nondigestible fiber found naturally in many plants. In this product, inulin is derived from chicory root. Inulin is a complex carbohydrate which can be digested by certain microorganisms providing them with energy. Inulin also supports the absorption of calcium and magnesium.[†]
- **Galactooligosaccharide (GOS)**—A nondigestible carbohydrate used by certain bacteria as food. Research suggests that GOS is a preferred substrate for BB-12, and in mice, GOS supplementation supported the active proteins and cells in the gut mucosa, and increased the amount of short chain fatty acid and lactate in the gut.[†]

How ProSynbiotic Keeps You Healthy

The normal human ecosystem contains over 400 bacterial species, and can be affected by things like age, diet, genes, lifestyle, gender, and where we live. It is well accepted that gut bacteria significantly affect how the body works and how we process nutrients. So when the gut microbiome is unbalanced, it can lead to less than optimal health.

The probiotic strains in ProSynbiotic are designed to make the gut a more hospitable place for our distinctive gut communities. These supplemental microbes are transient helpers, helping to promote a more amenable environment for “good” bacteria so our own mix of microorganisms can support us. ProSynbiotic:

- Supports gut flora
- Maintains a healthy gut environment
- Supports normal bowel regularity and consistency
- Improves nutrient digestion/absorption
- Supports the body's natural immune response
- Contributes to absorption of calcium and magnesium

The prebiotic fibers are included to help the supplemental bacteria reach their preferred destination, as well as support our resident microbes.[†]

What Makes ProSynbiotic Unique

Product Attributes

- Complex synbiotic product with a combination of probiotic strains and prebiotic fibers (called a synbiotic) is designed to leverage the synergistic effect of these ingredients and give them a better chance to get where they need to go in the gut
- Research-validated health benefits for proprietary probiotic strains
- Combination of prebiotic fibers for the use of diverse probiotic microbes

Manufacturing and Quality-Control Processes

Degreed microbiologists and chemists in our on-site laboratories continually conduct bacterial and analytical tests on raw materials, product batches, and finished products

- Ensures consistent quality and safety

Studies on nutrients generally use large doses and these studies, some of which are cited below, are the basis for much of the information we provide you in this publication about whole food ingredients. See the supplement facts for ProSynbiotic.

- Barbosa T, Rescigno M. Advanced Review: Host-Bacteria Interactions in the Intestine: Homeostasis to Chronic Inflammation. *WIREs Systems Biology and Medicine*. 2010;2(1):80-97.
- Battacook M, Azam-Ali S. FAO Agricultural Services Bulletin - 134: Fermented fruits and vegetables. A global perspective... 1998; http://www.fao.org/docrep/0560e/x0560e05.htm#F. Accessed May 13, 2010.
- Christensen HR, Larsen CN, Kaestel P, et al. Immunomodulating potential of supplementation with probiotics: a dose-response study in healthy young adults. *FEMS Immunol Med Microbiol*. Aug 2006;47(3):380-390.
- Collado MC, Grzeskowiak L, Salminen S. Probiotic strains and their combination inhibit in vitro adhesion of pathogens to pig intestinal mucosa. *Curr Microbiol Sep*. 2007;55(3):260-265.
- Cummings JH, Macfarlane GT, Englyst HN. Prebiotic digestion and fermentation. *Am J Clin Nutr*. Feb 2001;73(2 Suppl):415S-420S.
- Davidson A. The Oxford Companion to Food. New York: Oxford University Press; 2006.
- de LeBlanc Ade M, Castillo NA, Perdigon G. Anti-infective mechanisms induced by a probiotic Lactobacillus strain against Salmonella enterica serovar Typhimurium infection. *Int J Food Microbiol*. Apr 15;138(3):223-231.
- Dogi CA, Galdeano CM, Perdigon G. Gut immune stimulation by non-pathogenic Gram(+) and Gram(-) bacteria. Comparison with a probiotic strain. *Cytokine*. Mar 2008;41(3):223-231.
- FAO/WHO. Food and Agriculture Organization of the United Nations/World Health Organization Working Group for the Evaluation of Probiotics in Food: Guidelines for the Evaluation of probiotics in food. 2002; ftp://ftp.fao.org/esn/food/wgreport2.pdf. Accessed May 13, 2010.
- Fuller R. Probiotics in human medicine. *Gut*. Apr 1991;32(4):439-442.
- Gibson GR, Beatty ER, Wang X, Cummings JH. Selective stimulation of bifidobacteria in the human colon by oligofructose and inulin. *Gastroenterology*. Apr 1995;108(4):975-982.
- Gibson GR, Wang X. Enrichment of bifidobacteria from human gut contents by oligofructose using continuous culture. *FEMS Microbiol Lett*. May 1 1994;118(1-2):121-127.
- Gibson GR, Wang X. Regulatory effects of bifidobacteria on the growth of other colonic bacteria. *J Appl Bacteriol*. Oct 1994;77(4):412-420.
- Gill SR, Pop M, Deboy RT, et al. Metagenomic analysis of the human distal gut microbiome. *Science*. Jun 2 2006;312(5778):1355-1359.
- Gorbach SL. Microbiology of the Gastrointestinal Tract. In: Baron S, ed. Medical Microbiology, 4th Ed. Galveston: The University of Texas Medical Branch at Galveston; TX; 1996.
- Heland MH, Wicklund T, Narvhus JA. Growth and metabolism of selected strains of probiotic bacteria, in maize porridge with added malted barley. *Int J Food Microbiol*. Mar 15 2004;91(3):305-313.
- Kanauchi O, Mitsuyama K, Araki Y, Andoh A. Modification of intestinal flora in the treatment of inflammatory bowel disease. *Curr Pharm Des*. 2003;9(4):333-346.
- Khoruts A, Dicksved J, Jansson JK, Sadovsky MJ. Changes in the composition of the human fecal microbiome after bacteriotherapy for recurrent Clostridium difficile-associated diarrhea. *J Clin Gastroenterol*. May-Jun;44(5):354-360.
- Langlands SJ, Hopkins MJ, Coleman N, Cummings JH. Probiotic carbohydrates modify the mucosa associated microflora of the human large bowel. *Gut*. Nov 2004;53(11):1610-1616.
- Leforester G, Blas A, Blachier F, et al. Effects of galacto-oligosaccharide ingestion on the mucosa-associated mucins and sucrase activity in the small intestine of mice. *Eur J Nutr*. Dec 2009;48(8):457-464.
- Macouzet M, Lee BH, Robert N. Production of conjugated linoleic acid by probiotic Lactobacillus acidophilus La-5. *J Appl Microbiol*. Jun 2009;106(6):1886-1891.
- Medellin-Pena MJ, Wang H, Johnson R, Anand S, Griffiths MW. Probiotics affect virulence-related gene expression in Escherichia coli O157:H7. *Appl Environ Microbiol*. Jul 2007;73(13):4259-4267.
- Medvedovic M, Halbleib D, Miller ML, LaDow K, Sartor MA, Tomlinson CR. Gene expression profiling of blood to predict the onset of leukemia. *Blood Cells Mol Dis*. Jan-Feb 2009;42(1):64-70.
- Mueller S, Saunier K, Hanisch C, et al. Differences in fecal microbiota in different European study populations in relation to age, gender, and country: a cross-sectional study. *Appl Environ Microbiol*. Feb 2006;72(2):1027-1033.
- Okada M, Bohin C, Kanazawa K, Midvedt T. Experimental study of the influence of intestinal flora on the healing of intestinal anastomoses. *Br J Surg*. Jul 1999;86(7):961-965.
- Palmer C, Bik EM, DiGiulio DB, Relman DA, Brown PO. Development of the human infant intestinal microbiota. *PLoS Biol*. Jul 2007;5(7):e177.
- Pan XD, Chen FQ, Wu TX, Tang HG, Zhao ZY. Probiotic oligosaccharides change the concentrations of short-chain fatty acids and the microbial population of mouse bowel. *J Zhejiang Univ Sci B*. Apr 2009;10(4):258-263.
- Parker-Pope T. Probiotics: Looking underneath the yogurt label. 2009; http://query.nytimes.com/gst/fullpage.html?res=9F03E7DC103E93A1575AC0A96F9C8B63. Accessed September 29, 2009.
- Qin J, Li R, Raes J, et al. A human gut microbial gene catalogue established by metagenomic sequencing. *Nature*. Mar 4;464(7285):59-65.
- Robertson MB, Borrett F, Bouley C, Cummings JH. Colonic microflora: nutrition and health. Summary and conclusions of an International Life Sciences Institute (ILSI) [Europe] workshop held in Barcelona, Spain. *Nutr Rev*. May 1995;53(5):127-130.
- Sartor RB. Microbial influences in inflammatory bowel diseases. *Gastroenterology*. Feb 2006;134(2):577-594.
- Scholz-Ahrens KE, Ade P, Marten B, et al. Prebiotics, probiotics, and synbiotics affect mineral absorption, bone mineral content, and bone structure. *J Nutr*. Mar 2007;137(3 Suppl 2):838S-846S.
- Sherman PM, Ossa JC, Johnson-Henry K. Unraveling mechanisms of action of probiotics. *Nutr Clin Pract*. Feb-Mar 2009;24(1):10-14.
- Stark PL, Lee A. The microbial ecology of the large bowel of breast-fed and formula-fed infants during the first year of life. *J Med Microbiol*. May 1982;15(2):189-203.
- Tabasco R, Garcia-Cayuela T, Pelaez C, Requena T. Lactobacillus acidophilus La-5 increases lactacin B production when it senses live target bacteria. *Int J Food Microbiol*. Jun 30 2009;132(2-3):109-116.
- Tumbaugh PJ, Ley RE, Mahowald MA, Magrini V, Mardis ER, Gordon JI. An obesity-associated gut microbiome with increased capacity for energy harvest. *Nature*. Dec 21 2006;444(7122):1027-1031.
- Vernazza CL, Gibson GR, Rastall RA. Carbohydrate preference, acid tolerance and bile tolerance in five strains of Bifidobacterium. *J Appl Microbiol*. Apr 2006;100(4):846-853.
- Vulevic J, Drakoularakou A, Yaopob P, Tzortzis G, Gibson GR. Modulation of the fecal microflora profile and immune function by a novel trans-galactooligosaccharide mixture (B-GOS) in healthy elderly volunteers. *Am J Clin Nutr*. Nov 2008;88(5):1438-1446.
- Wall R, Hussey SG, Ryan CA, et al. Presence of two Lactobacillus and Bifidobacterium probiotic strains in the neonatal ileum. *ISME J*. Jan 2008;2(1):83-91.



800-558-8740 | standardprocess.com