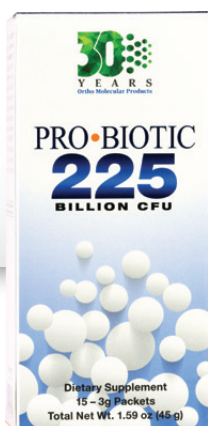


# PROBIOTIC 225



## CLINICAL APPLICATIONS

- Accelerates the Proliferation of Healthy Intestinal Microflora
- Promotes a Rapid Immune Response
- Maintains Normal Inflammatory Balance

## GASTROINTESTINAL SUPPORT

Probiotic 225 is a maximum-strength probiotic for cases of acute gastrointestinal (GI) and immune challenges. Going beyond the threshold of traditional probiotic support, high-dose probiotics influence gut health and immunity in ways lower-dose probiotics cannot. Shown to activate over 1,700 genes involved in immune and inflammatory signaling, high-dose probiotics support a healthy, balanced immune response. Delivering 225 billion active probiotic cultures per packet, Probiotic 225 creates a rapid response to reset the immune system and maintain normal inflammatory balance. Each convenient, single serving packet provides six proven strains chosen for their ability to survive the harsh GI environment and deliver superior results.

### Overview

The GI tract is a finely balanced environment where roughly 500 different strains of bacteria compete for space and nutrients. When there is a healthy balance (eubiosis), few symptoms exist. However, dysbiosis can occur when an overabundance of potentially harmful organisms prevail. The natural microflora balance can become disrupted by medications (such as antibiotics, oral contraceptives, etc.), excessive alcohol consumption, or poor dietary intake.

Probiotics have been extensively studied and are characterized as having broad GI and immune benefits, including (1) increasing the population of healthy bacteria following microflora imbalance; (2) supporting healthy bowel function; (3) increasing the production of short-chain fatty acids, which provide energy to the cells of the intestinal lining; (4) strengthening the gut-immune barrier by promoting a healthy

gut mucosa; (5) aiding in the digestion of difficult-to-break-down compounds like lactose and casein; and (6) enhancing detoxification of harmful compounds.

Because probiotics are live organisms, there are many challenges associated with manufacturing and distributing probiotic supplements. For a probiotic to be effective, it must be shelf-stable through the expiration date and precisely delivered to the intestinal tract, where it can have maximum benefit. The microorganisms in Probiotic 225 are protected, sealed, and freeze dried away from moisture, heat, light and oxygen. This allows the bacteria to remain dormant until they are exposed to moisture in the GI tract.

### ***Lactobacillus acidophilus* (La-14)<sup>†</sup>**

*Lactobacillus acidophilus* is a beneficial bacteria strain that is normally found in the intestinal tract and mouth, and is commercially used in dairy products for the production of acidophilus-type yogurt. *L. acidophilus* ferments various carbohydrates to produce lactic acid, which increases the absorption and bioavailability of minerals, including calcium, copper, magnesium and manganese. The production of lactic acid also promotes health by creating an inhospitable environment for invading microbes.<sup>1</sup> *L. acidophilus* has been shown to protect intestinal cells by competing for adhesion space in the gut against harmful bacteria, such as *E. coli*. The *L. acidophilus* strain in Probiotic 225 has been specifically chosen because of its strong adherence and survival attributes in the GI tract. It has been demonstrated in vitro to tolerate exposure to gastric acid and bile salts, and has the ability to withstand antibiotics including Ciproflaxin, Polymyxin B and Tetracycline.<sup>2</sup>

<sup>†</sup> 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.

### **Lactobacillus plantarum (Lp-115)<sup>†</sup>**

*Lactobacillus plantarum* is a beneficial bacteria commonly found in fermented foods including sauerkraut, pickles, brined olives and sourdough. *L. plantarum* has been found to compete against strains of *Clostridium difficile* and *Clostridium perfringens*, due to the production of bacteriocins (lethal proteins) that inhibit bacterial growth.<sup>3</sup> Studies have demonstrated that *L. plantarum* helps boost the immune response by stimulating Th1-mediated immunity.<sup>4</sup>

### **Bifidobacterium lactis (BI-04)<sup>†</sup>**

*Bifidobacterium lactis* is predominantly found in the colon. A double-blind, randomized placebo-controlled trial on subjects receiving *B. lactis* or placebo for eight weeks found that *B. lactis* supported a balanced immune response in individuals hypersensitive to environmental allergens.<sup>5</sup> Studies examining immune development and dietary supplementation with *B. lactis* have shown that it supports GI health by reducing intestinal permeability.<sup>6</sup>

### **Lactobacillus salivarius (Ls-33)<sup>†</sup>**

*Lactobacillus salivarius* has been shown to produce bacteriocins which inhibit the growth of *Helicobacter pylori*. It can withstand high concentrations of acids allowing *L. salivarius* to adhere and survive in the stomach and bind to gastric epithelial cells, while producing high amounts of pathogen-inhibiting lactic acid.<sup>7</sup>

### **Lactobacillus casei (Lc-11)<sup>†</sup>**

The immune-regulating properties of *Lactobacillus casei* have been reported in several studies. *L. casei* has been shown to regulate inflammatory pathways and reduce oxidative stress, indicating an antioxidant effect.<sup>8</sup> *L. casei* has also been shown to support immune function by increasing natural killer (NK) cell activity and maintain normal inflammatory balance.<sup>9</sup>

### **Bifidobacterium bifidum (Bb-02)<sup>†</sup>**

*Bifidobacterium bifidum* has been shown to effectively compete with harmful bacteria such as *E. coli*, *Staphylococcus aureus* and *Campylobacter jejuni* suggesting that *B. bifidum's* lactic acid and acetic acid production provides an antagonistic action against pathogens to help maintain microflora balance.<sup>10</sup>

### **Larch Arabinogalactan<sup>†</sup>**

Larch arabinogalactan is a fermentable polysaccharide fiber from the Larch tree that enhances immunity by supporting the growth of beneficial gut microflora and strengthening the activity of NK cells.<sup>11</sup> It has been found to minimize ammonia synthesis and absorption, enhance production of short chain fatty acids and increase the population of beneficial gut microflora. In one placebo-controlled, double-blind,

randomized trial, arabinogalactan was found to boost immune activity and support upper respiratory health.<sup>12</sup>

### **Directions**

Mix 1 packet into 8 oz of a cold beverage of your choice or as recommended by your health care professional.

### **Does Not Contain**

Wheat, gluten, yeast, soy, corn, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners or preservatives.

### **Cautions**

If you are pregnant or nursing, consult your physician before taking this product.

## **Supplement Facts<sup>v1</sup>**

Serving Size 1 Packet (3 grams)  
Servings Per Container 15

<b>1 packet contains</b>	<b>Amount Per Serving</b>	<b>% Daily Value</b>
<b>Proprietary Blend</b>	225 billion CFU <sup>**</sup>	
<i>Lactobacillus plantarum</i> (Lp-115)		*
<i>Lactobacillus acidophilus</i> (La-14)		*
<i>Bifidobacterium lactis</i> (BI-04)		*
<i>Lactobacillus salivarius</i> (Ls-33)		*
<i>Lactobacillus casei</i> (Lc-11)		*
<i>Bifidobacterium bifidum</i> (Bb-06)		*
* Daily Value not established		

<sup>\*\*</sup>Colony Forming Units

**ID# 470015 15 Packets**

<sup>†</sup> 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.

**eFFICACY**  
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## References

1. Lipski E. Digestive Wellness. New Canaan (CT): Keats Publishing; 1996. p. 60-61.
2. Danisco. *Lactobacillus acidophilus* La-14 probiotic identity card.
3. Schoster A, Kokotovic B, Permin A, Pedersen PD, Bello FD, Guarabassi L. In vitro inhibition of *Clostridium difficile* and *Clostridium perfringens* by commercial probiotic strains. *Anaerobe*. 2013 Apr;20:36-41.
4. Chytilová M, Mudroňová D, Nemcová R, Gancarčíková S, Buleca V, Koščová J, Tkáčiková L. Anti-inflammatory and immunoregulatory effects of flax-seed oil and *Lactobacillus plantarum* - Biocenol™ LP96 in gnotobiotic pigs challenged with enterotoxigenic *Escherichia coli*. *Res Vet Sci*. 2013 Aug;95(1):103-9.
5. Singh A, Hacini-Rachinel F, Gosoniu ML, Bourdeau T, Holvoet S, Doucet-Ladeveze R, Beaumont M, Mercenier A, Nutten S. Immune-modulatory effect of probiotic *Bifidobacterium lactis* NCC2818 in individuals suffering from seasonal allergic rhinitis to grass pollen: an exploratory, randomized, placebo-controlled clinical trial. *Eur J Clin Nutr*. 2013 Feb;67(2):161-7.
6. Lewis MC, Patel DV, Fowler J, Duncker S, Zuercher AW, Mercenier A, Bailey M. Dietary supplementation with *Bifidobacterium lactis* NCC2818 from weaning reduces local immunoglobulin production in lymphoid-associated tissues but increases systemic antibodies in healthy neonates. *Br J Nutr*. 2013 Oct;110(7):1243-52.
7. Aiba Y, Suzuki N, Kabir AM, Takagi A, Koga Y. Lactic acid-mediated suppression of *Helicobacter pylori* by the oral administration of *Lactobacillus salivarius* as a probiotic in a gnotobiotic murine model. *Am J Gastroenterol*. 1998 Nov;93(11):2097-101.
8. Amdekar S, Singh V, Kumar A, Sharma P, Singh R. *Lactobacillus casei* and *Lactobacillus acidophilus* regulate inflammatory pathway and improve antioxidant status in collagen-induced arthritic rats. *J Interferon Cytokine Res*. 2013 Jan;33(1):1-8.
9. Dong H, Rowland I, Thomas LV, Yagoob P. Immunomodulatory effects of a probiotic drink containing *Lactobacillus casei* Shirota in healthy volunteers. *Eur J Nutr*. 2013 Dec;52(8):1853-63.
10. Fooks LJ, Gibson GR. Mixed culture fermentation studies on the effects of synbiotics on the human intestinal pathogens *Campylobacter jejuni* and *Escherichia coli*. *Anaerobe*. 2003 Oct;9(5):231-42.
11. Kelly GS. Larch arabinogalactan: clinical relevance of a novel immune-enhancing polysaccharide. *Altern Med Rev*. 1999 Apr;4(2):96-103.
12. Riede L, Grube B, Gruenwald J. Larch arabinogalactan effects on reducing incidence of upper respiratory infections. *Curr Med Res Opin*. 2013 Mar;29(3):251-8.