

# TOTAL PROBIOTIC

TOTAL  
HEALTH  
*Apothecary*

- Helps Maintain Gastrointestinal Balance
- Increases Secretory IgA for Enhanced Gut Immunity
- Supports Bowel Regularity
- Supports Digestion and Micronutrient Absorption



Total Probiotic is a unique probiotic formula designed to deliver active organisms shown to promote healthy gut microflora, protect intestinal integrity and boost immune function. Included in this formula is *Saccharomyces boulardii*, an extensively researched microorganism shown to help restore microflora balance by enhancing commensal organism function. Each Total Probiotic capsule provides seven proven probiotic strains chosen for their ability to withstand the harsh gastrointestinal (GI) environment and adhere to the intestinal tract to 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 be upset 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-breakdown 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. BioShield® technology is an innovative manufacturing process developed to ensure consistent and reliable results. The microorganisms in Ortho Biotic 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. By utilizing advanced encapsulation technology, the probiotic organisms are preserved and released on-target for maximum benefit.

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

*Lactobacillus acidophilus* is a beneficial bacterial 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. This includes 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

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intestinal cells by competing for adhesion space in the gut against harmful bacteria, such as *E. coli*. The *L. acidophilus* strain in Ortho Biotic 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 ciprofloxacin, Polymyxin B and Tetracycline.<sup>2</sup>

### **Lactobacillus paracasei (Lpc-37)<sup>†</sup>**

*Lactobacillus paracasei* has been shown to protect against the harmful effects of bacteria such as *Staphylococcus aureus* (*S. aureus*).<sup>3</sup> *L. paracasei* colonizes the intestinal tract by reinforcing defense mechanisms that support an immune response. It does this by supporting T-helper cell production and secreting secretory IgA (sIgA), an antibody critical for supporting intestinal immunity.<sup>4</sup> *L. paracasei* Lpc-37 is a gastric acid-resistant strain and has been shown in vitro to withstand antibiotics such as ciprofloxacin and Vancomycin.<sup>5</sup>

### **Bifidobacterium bifidum (Bb-06)<sup>†</sup>**

*Bifidobacterium bifidum* has been shown to effectively compete with harmful bacteria such as *E. coli*, *S. aureus* and *Campylobacter jejuni*, which suggests *B. bifidum*'s lactic acid and acetic acid production provides an antagonistic action against pathogens to help maintain microflora balance.<sup>6</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>7</sup> Studies examining immune development and dietary supplementation with *B. lactis* have shown that it supports GI health by reducing intestinal permeability.<sup>8</sup>

### **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>9</sup> Studies have also demonstrated that *L. plantarum* helps boost the immune response by stimulating Th1-mediated immunity.<sup>10</sup>

### **Lactobacillus rhamnosus (GG)<sup>†</sup>**

*Lactobacillus rhamnosus* has been proven to have remarkable survivability in the acid and bile environments in the GI tract. *L. rhamnosus* is particularly useful because of its ability to adhere to cells, enhance microflora balance, and inhibit pathogen adherence. *L. rhamnosus* was also found to positively affect inflammatory and immune gene signaling of over 1,700 genes when administered in high doses.<sup>10</sup>

### **Saccharomyces boulardii<sup>†</sup>**

*Saccharomyces boulardii* is a probiotic yeast that was first isolated from the skin of the tropical fruits lychee and mangosteen in 1923 by French scientist Henri Boulard, following the observation that mangosteen consumption controlled occasional diarrhea in natives of Southeast Asia. *S. boulardii* plays a role in supporting immune defense by increasing levels of sIgA, creating a first line of defense that helps bind and clear harmful bacteria.<sup>11</sup>

### **Directions**

1 capsule per day or as recommended by your health care professional.

### **Does Not Contain**

Wheat, gluten, 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>v3</sup>

Serving Size 1 Capsule  
Servings Per Container 30

1 capsule contains	Amount Per Serving	% Daily Value
<b>Proprietary Blend</b>	20 Billion CFU <sup>++</sup>	
<i>Lactobacillus acidophilus</i> (La-14)		*
<i>Lactobacillus paracasei</i> (Lpc-37)		*
<i>Bifidobacterium lactis</i> (BI-04)		*
<i>Bifidobacterium bifidum</i> (Bb-06)		*
<i>Lactobacillus plantarum</i> (Lp-115)		*
<i>Lactobacillus rhamnosus</i> (GG)		*
<i>Saccharomyces boulardii</i>	3 Billion CFU <sup>++</sup>	*

\* Daily Value not established

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## References

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