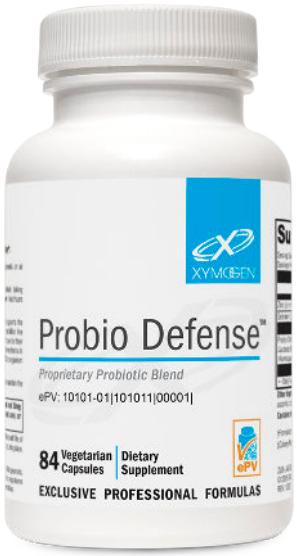
# Probio Defense™

## Proprietary Probiotic Blend




**Available in 84 capsules**

## Clinical Applications

- Contributes to Balanced Gastrointestinal Flora*
- Supports a Healthy Immune System*
- Supports Intestinal Health and Function*
- Supports Lactose Tolerance*

***Probio Defense™*** *is a combination of probiotic bacteria that supports the immune and gastrointestinal systems. It is formulated with ten billion live organisms per capsule† and provides well-researched strains chosen for their ability to maintain viability throughout the small intestine. The three strains in Probio Defense are registered in the National Collection of Microorganism Cultures at the Institut Pasteur in France. Selenium and zinc are present to provide antioxidant support, help balance intestinal flora, and stimulate the body's natural immune defenses.**

## Discussion

Probiotics refer to the beneficial microorganisms that reside in our gastrointestinal (GI) tracts and appear to exist in a symbiotic relationship with the human body. Several probiotic bacteria, including *Lactobacilli* and *Bifidobacteria*, have been studied for their beneficial effects on health and wellness. The American Gastroenterological Society provides a comprehensive review of the uses and proposed benefits of probiotics.[1] Research on probiotics has focused on the positive impact they appear to have on immune function, GI health, and the body's normal response to inflammation.*[2-6]

**Mechanisms of Action** It is suggested that the mechanisms by which probiotics exert their beneficial health effects are manifold and include the production of inhibitory substances (e.g., lactic acid, bacteriocins) and competition for epithelial cell adhesion, both of which help good bacteria predominate; stimulation of mucus production; metabolic activities that decrease microbial toxins, break down lactose, and support host digestion; changes in corticosterone levels; and downregulation of inflammatory interleukins and cytokines.[7-12] Additional proposed mechanisms include stimulation of immunoglobulin A, trophic influences on intestinal mucosa, and assistance in the delivery of therapeutic substances to various portions of the intestine.[13] These varied mechanisms help preserve the health, integrity, and function of the GI tract at both the cellular and system levels. Research suggests that in some cases a mixture of strains, including *Lactobacilli* and *Bifidobacteria*, appears to be most beneficial.*[1]

**Proprietary Strains** Probio Defense comprises *Lactobacillus helveticus* Rosell-52,† *Lactobacillus rhamnosus* Rosell-11, and *Bifidobacterium longum* Rosell-175. These strains were isolated and are produced by Institut Rosell-Lallemand (IR), a company that has made significant discoveries in the fields of microbiology and nutrition since 1934 with a focus on providing reliable, stable, and documented strains to the healthcare industry.[15] IR uses the most advanced DNA-analysis technology to verify their strains. They then test these strains to measure gastric acid and intestinal solution resistance over various time spans and temperatures. IR also tests adhesion to the intestinal mucosa. Competitive inhibition and increased mucin expression have been documented by IR, along with stability at various temperatures and humidity.*

**Human Clinical Trials** Numerous clinical trials employing double-blind, randomized, placebo-controlled techniques have been performed with the probiotic strains found in Probio Defense. The majority of these studies focus on host intestinal flora and GI health. For instance, studies completed on children demonstrated that the *Lactobacillus* strains in Probio Defense reduce bacterial toxin load and support gastrointestinal health.[10,16,17] Large-scale studies support the role of these *Lactobacillus* strains as adjunct therapy in promoting GI health and healthy bowel function.[18,19] A small-scale study also indicates that lactose tolerance was supported in 19 adult patients taking these strains daily for two weeks.[11] A randomized, controlled, single-blind study of children aged 10-12 years suggested that *Lactobacillus strains*, such as those found in Probio Defense, positively supported lactose tolerance in those who received them.[20] A double-blind, randomized, controlled trial utilizing *Bifidobacterium longum*, along with an inulin-based prebiotic, resulted in a significant reduction in inflammatory cytokines.*[21]

**Psychological Benefits** Emerging studies (animal and human) suggest that probiotics affect the host's psychological state and normal response to stress. This may be due to the effect that beneficial bacteria have on cytokine balance, neurotransmitter production, and the support of normal glucose tolerance. A study of *Lactobacillus helveticus* and *Bifidobacterium longum* suggested that these strains positively support mood and a normal response to stress, as measured by standard testing.*[22]

**Host Defense and Digestive Transit** With the provision of the essential trace minerals selenium and zinc, Probio Defense also provides antioxidant and immune support.[23] In addition, studies indicate that the three probiotic strains found in Probio Defense remain viable as they travel through the digestive tract to the distal end of the small intestine, further supporting their positive effects on health.*[24]

†New and improved genetic methods have allowed deeper insight into bacterial chromosomes. Use of these methods led to the reclassification, in 2006, of Rosell-52 from *Lactobacillus acidophilus* to *Lactobacillus helveticus*. This name change has no impact on safety or on the value of scientific and clinical documentation.



***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.**

## Probio Defense™ Supplement Facts

Serving Size: 1 Capsule

| | Amount Per Serving | %Daily Value |
|---|---|---|
| Zinc (as zinc yeast) | 2 mg | 18% |
| Selenium (as selenium yeast) | 12.5 mcg | 23% |
| Probio Defense Blend *Lactobacillus helveticus* Rosell-52, *Lactobacillus rhamnosus* Rosell-11, *Bifidobacterium longum* Rosell-175 | 51.553 mg (2 Billion† CFU‡) | ** |

** Daily Value not established.

**Other Ingredients:** Potato starch, HPMC (capsule), magnesium stearate, and ascorbic acid.
**Contains:** Milk and Soy.
†Formulated with 10 Billion CFU‡ at time of manufacture
‡Colony-Forming Units

**DIRECTIONS:** Take one capsule twice daily before or during meals, or as directed by your healthcare professional.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.

**DOES NOT CONTAIN:** Wheat, gluten, animal products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

**STORAGE:** Probio Defense is shipped refrigerated to preserve the shelf life of the strains. In order to maximize shelf life, keep closed in a cool, dry place. Keep out of the reach of children.

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VEGETARIAN CAPS

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**Additional references available upon request**

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**All XYMOGEN® Formulas Meet or Exceed cGMP Quality Standards.**

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