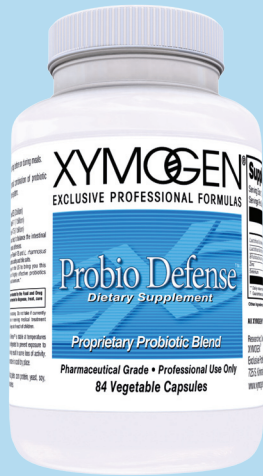


Probio Defense™



Clinical Applications

- Balance Intestinal Flora
- Stimulate Body's Natural Defenses (Innate and Acquired Immunity)
- Induce "Immunosurveillance"
- Maintain Efficient Intestinal Barrier

*Probio Defense™ contains an optimal combination of three probiotic bacteria that reinforce the intestinal flora balance and boost the immune system; along with zinc and selenium that have immunostimulatory effects. The strains include *Lactobacillus helveticus* Rosell-52, *Lactobacillus rhamnosus* Rosell-11 and *Bifidobacterium longum* Rosell-175. Both minerals are present in a highly bioavailable mineral-enriched yeast form.*

Discussion

Probiotic components in Probio Defense™ protect the efficiency of the intestinal barrier and modulate the immune system's capacity to respond to ingested pathogens. Numerous studies have documented the ability of probiotics to inhibit microbial pathogens' infection or to promote recovery from infections. Institut Rosell's studies have assured all three strains remain alive as they travel through the digestive tract to the distal end of the small intestine. Using human cells grown in tissue cultures, the scientists there have confirmed moderate to very strong adhesion to the surface of epithelial cells. Gut colonization cannot be studied without intestinal tissue biopsies. These have not been performed; however, given the information available, these particular strains may be able to colonize in vivo. The three strains are safe and are registered in the National Collection of Microorganism Cultures at the Institut Pasteur in France.

Selenium, a well-known antioxidant, is associated with proteins found in every cell. A deficiency is not only accompanied by loss of immunocompetence, but is linked to occurrence, virulence or progression of some viral infections according to research. Selenium is present as selenomethionine.

Zinc directly affects the competence of a wide variety of immune cells. The negative impact of zinc deficiency upon immune competence is partly due to the resultant damage to cells lining the G.I. and pulmonary tracts, predisposing the entry of pathogens and consequent susceptibility to infections.

An in vitro research program has shown the synergistic ingredients in Probio Defense™ are efficacious at all levels of the immune system. Probio Defense™:

- stimulates immune cell proliferation.
- activates macrophages to recognize, ingest and destroy pathogens. (Innate immunity)
- activates B cells that precede increased concentrations of antibodies. (Acquired immunity)
- modulates the immune system by acting upon the production of cytokines (IL-2, IL-6, IL-8) that act as "go-betweens" to coordinate the actions of the immune system.
- reduces the amount of transforming growth factor (TGF-b) that inhibits innate and acquired immunity.

Probio Defense™





Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 84

	Amount	%Daily Value
Lactobacillus acidophilus Rosell-52	3 billion live organisms†	**
Lactobacillus rhamnosus Rosell-11	1 billion live organisms†	**
Bifidobacterium longum Rosell-175	1 billion live organisms†	**
Zinc	2 mg	13%
Selenium	12.5 mcg	18%

** Daily value not established.
† Guaranteed at date of expiration.

Other ingredients: Cellulose, potato starch, magnesium stearate, ascorbic acid.

Dosing

1-2 capsules per day before or during meals with a glass of water.

References

1. Marteau P. Living drugs for gastrointestinal diseases: the case for probiotics. *Dig Dis.* 2006;24(1-2):137-47 [PMID: 16699272]
2. Doron S, Gorbach SL. Probiotics: their role in the treatment and prevention of disease. *Expert Rev Anti Infect Ther.* 2006 Apr;4(2):261-75. [PMID: 16597207]
3. Perdigon G et al. The oral administration of lactic acid bacteria increases mucosal intestinal immunity in response to enteropathogens. *Journal of Food Protection,* 2000;53, 404-410
4. Vanderhoof JA, Young RJ. The role of probiotics in the treatment of intestinal infections and inflammation. *Curr Opin Gastroenterol.* 2001 Jan;17(1):58-6 [PMID: 17031151]
5. Rink L, Kirchner H. Zinc altered immune function and cytokine production. *J. Nutr.,* 2000; 130:1407S-1411S.
6. Mocchegiani E, et al. Zinc, infections and immunosenescence. *Mech Aging Dev.,* 2000;121:21-35
7. Measham JD, Green-Johnson JM. The Immunomodulatory Effects of selenium as a component of mineral-enriched yeast in a murine system. Presented at the International Symposium on Probiotics in Montreal, QC, October, 2000 {Institut Rosell communication}
8. Kostrzynska M, Dixon J, Lepp D. Receptors recognized by bifidobacteria on intestinal epithelial cells. Presented at 3rd Joint Symposium RRI-INRA- "Beyond antimicrobials- the future of gut microbiology", 12-15 June 2002, Aberdeen, UK {Institut Rosell communication}
9. Direct communications with researchers at Institut Rosell/Lallemand.
10. Institut Rosell. ProDefense: Probiotics for a healthy life. Dossier ProD. Jan 2003. Canada

Storage:

Store in a cool and dry place (64-72 degrees F). When stored as recommended, Probio Defense™ is guaranteed for 12 months in its original packaging.

Contraindications:

Probio Defense™ should not be used by children. In addition it is contraindicated under the following circumstances:

- intravenous catheters (most important!)
- post-surgery for GI, oral, allografts
- patients with a history of myocarditis and endocarditis
- patients with liver dysfunction including diabetes
- patients undergoing immunosuppressive therapy
- immunodeficient patients such as AIDS patients

*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.