ENZYME SCIENCE™
EXCEPTIONAL FORMULAS

# PRO-BIO™ ESSENTIALS


## for a HEALTHY GUT MICROBIOME*

Featuring *Lactobacillus* and spore-based *Bacillus subtilis*

***With over 500 different strains of bacteria with a total of 40 trillion bacterial cells within the gastrointestinal tract, maintaining a healthy environment is essential to not only healthy digestion but also important in protecting the body against unwanted pathogens.[1] The gastrointestinal tract is made up of microorganisms which include bacteria, viruses, fungi, protozoa, and archaea.***

The natural balance of bacteria within the microbiome can become altered due to dietary habits, stress levels, medications, age, and genetics. Lifestyle choices and environmental factors also have a profound effect on this delicate balance.

The health of our microbiome is closely linked with the immune system; these microorganisms are responsible in maintaining a healthy gut-immune barrier through healthy gut mucosa.[2] This single layer of epithelium serves as the barrier between microorganisms (and pathogens) from immune cells.

## THE ROLE OF PROBIOTICS

Probiotics can be defined as beneficial microorganisms that complement the microbes within the existing ecosystem; they can be found in certain foods, drinks, or through supplementation.* The benefits of probiotics have been well studied and shown to support immune and digestion integrity through supporting healthy microflora balance, aiding in proper digestion of key vitamins and minerals needed for energy as well as fighting off unwanted pathogens.*

Probiotics are identified by their specific strain, including the genus, species and subspecies. Due to strain variation, each strain can have a different response in the host. This is due to the diversity of the strains and its unique ability to respond to the host environment.[3] Due to different strains having varying benefits on the host this also influences the survival rate within the intestine, which is dependent on an acid pH, enzymes and biliary salts.[4]

## SUPPLEMENT FACTS

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| **Pro-Bio 8 strain blend** | **10 Billion CFU** |
| *Bacillus subtilis DE111®* | |
| *L. paracasei Lpc-37* | |
| *L. acidophilus La-14* | |
| *L. casei Lc-11* | |
| *L. bulgaricus Lb-87* | |
| *L. plantarum Lp-115* | |
| *L. rhamnosus Lr-32* | |
| *L. salivarius Ls-33* | |

**OTHER INGREDIENTS:**
100% Vegetarian capsule (gellan gum, cellulose, water)

**CONTAINS NO:**
Gluten, milk, casein, soy, egg, artificial colors or flavors

**RECOMMENDED DOSAGE:**
1 capsule daily with water. Best if taken on an empty stomach one hour before or two hours after a meal.

**OUR QUALITY**

GLUTEN FREE · DAIRY FREE · SOY FREE · NO FILLERS · NON GMO · VEGETARIAN

## *LACTOBACILLUS*

One of the most studied genus is *lactobacilli*. Each different species of *Lactobacillus* has a different mechanism of action, producing a unique response to the host ecosystem.[5] The beneficial bacterial strain, *Lactobacillus acidophilus* is used in the production of different foods such as yogurt and fermented foods such as sauerkraut and the probiotic milk drink, kefir. This beneficial bacterial strain ferments carbohydrates to produce lactic acid which helps regulate the growth of microorganisms as well as increasing the absorption of key vitamins and minerals.*

## *BACILLUS SUBTILIS*

*Bacillus subtilis*, a spore-based probiotic has been well studied to withstand a variety of conditions within the gastrointestinal tract. The species bacillus is found in fermented foods such as rice, soybeans, kimchi or raw vegetables grown in soil that includes natural microbes. *Bacillus subtilis* is unique in its ability to produce a protective barrier that can withstand a lower pH in the stomach , improving proper delivery to the small intestine.*[6] This important outer layer also provides protection from heat and light, making *Bacillus subtilis* shelf stable.

In research, spore-based probiotics have been shown to benefit digestion through supporting healthy gut barrier function and maintaining a healthy diversity of microbes within the gastrointestinal tract.*[7] A more recent study completed in 2017 evaluated the use of spore-based probiotics and metabolic health.[8] The study included the consumption of a high-fat, high calorie diet and 4 billion CFU from spore-based probiotic (*Bacillus indicus, Bacillus subtilis, Bacillus coagulans,* and *Bacillus licheniformis, Bacillus clausii*).

## THE GREAT EIGHT

Each capsule of Pro-Bio Essentials includes eight different strains of beneficial probiotics.*

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|---|---|
| *Bacillus subtilis* | *L. paracasei* |
| *L. acidophilus* | *L. casei* |
| *L. bulgaricus* | *L. Plantarum* |
| *L. rhamnosus* | *L. salivarius* |

Each capsule of Pro-bio Essentials is made up of 10 billion CFU at the time of expiration; this formula is shelf-stable, improving patient compliance and eliminating the hassle of refrigeration.

## PRO-BIO, ESSENTIAL TO OPTIMAL HEALTH

It is no secret that achieving optimal health starts in the gut. When the fine balance of bacteria gets shifted, it is not always as simple as adding in a single strain of probiotics. The type of strain, as well as the potency and delivery system all play important factors. Probiotic supplementation may balance and restore the gut microbiome to its optimal state.* Pro-Bio Essentials offers a dynamic approach to gut health, including 7 strains of *Lactobacillus* plus *Bacillus subtilis* at a total dose of 10 billion CFU per capsule. A balanced yet diverse microbiome supports healthy digestion and absorption of nutrients, both of which are key factors in optimal health.*

## REFERENCES


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