**Probiotics for Digestive and Immune Health**

The human body carries nearly 100 trillion bacteria in the gut...that's more than 10 times the total number of human cells in the entire body. Probiotics are those “good” bacteria that help keep the intestines healthy and assist in digestion and nutrient absorption. Researchers are also finding evidence that certain bacteria in the gut influence the development of aspects of the immune system. In fact, the gut accounts for 25% of the immune cells in the body which provides 50% of the body’s immune response.

Probiotics’ main benefit is that they help restore balance in the intestinal microbiota. By enhancing the intestinal flora, these microorganisms may have a larger effect in terms of keeping people in good health. Understanding the type and quantity of microorganisms in the gut has become a critical goal in the pursuit of overall wellness. Consumers today have the ability to influence their gut microbiota like never before—from supplements to food, people are seeking sources of good bacteria.

**Probiotic Strains: SPORE AND NON-SPORE FORMERS**

The majority of probiotics currently available are bacteria which are non-spore formers, such as Lactobacilli and Bifidobacteria. These probiotic strains have been widely studied for their health benefits and are a popular choice for use in dietary supplements or cold-processed foods, such as yogurt.

Spore forming bacteria are a diverse group of very hardy bacteria, characterized by their ability to form endospores to protect themselves when conditions are not favorable. The Bacillus subtilis species of microorganism has been known for more than 100 years, having first been isolated and described in the 1800s. It is considered to be a normal, albeit minor, inhabitant of the gut in animals and humans.

Bacillus subtilis has the ability to form spores that protect the microbes from harsh conditions until they enter an environment ripe for germination, such as the GI tract. Because of this spore-forming ability, Bacillus subtilis offers additional benefits as a probiotic:

- Remains viable under a wide temperature range, doesn't require refrigeration
- Survives passage through the acidic environment of the GI tract
- Can persist in the GI tract, increase its numbers and then re-sporulate
- Supports the normal immune reaction of intestinal cells
- Crowds out bacterial pathogens and maintains healthy gut flora
- Communicates with intestinal cells to maintain gut barrier function

Each type and strain of probiotic, spore and non-spore forming, performs a different role with particular benefits in terms of digestive and immune systems’ health, as well as where in the GI tract they act. Multi-strain probiotic supplements provide a broad spectrum of benefits.

**Bacillus Subtilis - DE111**

Deerland Enzymes has genome sequenced and clinically tested a highly effective strain of Bacillus subtilis, a very stable probiotic spore that works as a complement to many of the non-spore strains on the market today. DE111 has been fully sequenced and uploaded to GenBank, the National Institutes of Health genetic sequence database.
Clinical Results
A randomized, double-blind, placebo controlled human clinical study has shown the ability of DE111 to support a healthy gut microflora by controlling microbial populations as well as support digestion and maintain general health.

CONTROLS MICROBIAL POPULATIONS
DE111 is a classic Bacillus subtilis strain that supports the normal proliferation of beneficial bacteria and crowds out other bacteria.

SUPPORTS DIGESTION AND MAINTAINS GENERAL HEALTH
DE111 supports the normal breakdown of complex carbohydrates and fats, promoting proper digestion and nutrient absorption.

References:

These statements have not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.

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