Probiotic

INGREDIENTS
Doctor’s Best Probiotic™ supplies six strains of *Bifidobacterium* and *Lactobacillus* probiotics, bacterial families with solidly established benefits for digestive and whole-body health. This product provides genetically well-defined strains to help maintain healthy bacterial balance in the gastrointestinal (GI) tract, promote healthy digestive and excretory function, and enhance healthy immune function in the body as a whole.

Probiotics are defined as “live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.”¹ The human body is actually an ecosystem in which probiotics obtain shelter and food and the individual derives health benefits from their presence. This mutually beneficial relationship is called *symbiosis*. Dietary supplementation with proven probiotics can positively influence this symbiosis and thereby promote good health.²

For probiotic dietary supplements, the common practice of mixing together several bacterial species is not sufficient to guarantee the consumer will benefit. Recent research using DNA sequencing and other sophisticated analysis has identified multiple strains for individual bacterial species, each with its own DNA profile and unique capability to help or hurt its human host. The strains used in this product have samples deposited in the American Type Culture Collection (ATCC) Bacteriology Collection.³ This global bioresource center facilitates periodic verification of strain identity, and other quality control to ensure users of the probiotic product that its benefits are preserved over time.

**BENEFITS**

**Numerous Actions That Support Healthy Digestive and Excretory Function**

Healthy probiotic balance in the GI tract is continually vulnerable to assault. Poor diet, emotional stress, harmful chemicals, negative lifestyle factors such as smoking or drinking, and overweight all can deplete probiotics from the GI tract.²,⁴ Lactobacilli and bifidobacteria can benefit their human hosts by diverse biological actions, which include:

- Converting undigested dietary fiber into energy for their own use.⁵
- Generating butyrate, vitamin K and other nutrients that nourish the intestinal lining.⁶,⁷
- Positively influencing the intestinal antioxidant defenses.⁸
- Supporting the structural integrity of the delicate intestinal lining.⁹,¹⁰
- Improving intestinal motility to move contents for excretion.¹¹
- Promoting healthy immune system vigilance in the GI tract.²
- Helping to detoxify certain potentially toxic substances in the GI tract.⁴

Probiotic lactobacilli tend to be more consistently present in the mouth, stomach and small intestine than in the large intestine.¹⁰ The six strains selected have strong resistance to both the stomach acid and the harsh bile substances in the upper small intestine. They stick tightly to the intestinal lining, residing mainly in the mucus layer that extends out from it. They release substances that help them compete against less beneficial bacteria,⁴ and they benefit healthy immune function.¹² *Lactobacillus acidophilus* La-14 (herein abbreviated La14) is a well studied, especially hardy strain that strongly resists the challenging conditions of the intestinal environment.¹³ *Lactobacillus salivarius* Ls-33 (Ls33) may help protect the vulnerable intestinal lining against toxic chemical attack.¹⁴ *Lactobacillus paracasei* Lpc-37 (Lpc37) has also been used in conjunction with other lactobacilli.

### Supplement Facts

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1 veggie capsule</th>
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<tbody>
<tr>
<td>Servings per container</td>
<td>30 servings</td>
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<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>% Daily Value</th>
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<tbody>
<tr>
<td>Probiotic bacterial strains proprietary blend</td>
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<tr>
<td><em>Bifidobacterium lactis</em> strain HN019 (HOWARU® Bifido)</td>
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<tr>
<td><em>Bifidobacterium lactis</em> strain Bl-04</td>
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<tr>
<td><em>Bifidobacterium lactis</em> strain Bl-07</td>
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<tr>
<td><em>Lactobacillus acidophilus</em> strain La-14</td>
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<tr>
<td><em>Lactobacillus salivarius</em> strain Ls-33</td>
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<td><em>Lactobacillus paracasei</em> strain Lpc-37</td>
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† Daily Value not established.

1 CFU = 1 Colony Forming Unit

**Other Ingredients:** Cellulose, modified cellulose (vegetarian capsule), calcium laurate, silicon dioxide.

**Suggested Adult Use:** Take 1 capsule daily, with food, or as recommended by a nutritionally-informed physician.

**Non-GMO / Gluten Free / Vegan**

Store in a cool dry place. No refrigeration necessary.

* 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.
Probiotic bifidobacteria are most abundant in the large intestine, colonizing it right after birth. The trademarked strain Bifidobacterium lactis HNO19 (Bl019) is well documented for its intestinal and immune benefits.\textsuperscript{13,15,16} Bifidobacterium lactis Bi-07 (Bi07) is genetically well defined with 100 percent of its DNA sequence known,\textsuperscript{17} and has proven clinical benefit.\textsuperscript{18} Bifidobacterium lactis Bl-04 (Bl04) also is genetically well defined.\textsuperscript{19} It is able to stick to the intestinal lining, tolerates exposure to the bile fluids,\textsuperscript{5,19} and is extremely versatile at using nondigestible carbohydrates for energy.\textsuperscript{5}

**Promotes Digestion and Bowel Regularity***

The “whole gut transit time” is the time taken for a meal to pass through the entire GI tract, and is an important measure of digestive and bowel health.\textsuperscript{20} Strain Bl019 was tested against occasional constipation in a well-designed U.S. clinical trial.\textsuperscript{11} The 87 subjects were aged 25–65 years and began the trial with an average 1-3 bowel movements per week. They received either a high dose of Bl019 (17.2 billion CFU) or a low dose (1.8 billion CFU), or a placebo, daily for two weeks. One CFU (Colony Forming Unit) is roughly equivalent to one live probiotic cell. On selected days the subjects ingested marker materials that were tracked by X-rays and used to measure transit time. They also filled in a self-report questionnaire to rate nine measures of their GI health.

When the transit time data was analyzed, the placebo group showed no change in transit time, whereas the low-dose Bl019 group showed 25 percent improvement and the high-dose group showed 33 percent improvement (both statistically better than the placebo).\textsuperscript{13} Then the questionnaire ratings were analyzed, and the two groups that received Bl019 reported additional benefits markedly different from the experiences of the placebo group.

On their self-reported GI functions, both the low-dose and high-dose Bl019 groups reported superior gastrointestinal comfort and function as well as improvement of gurgling, occasional constipation, regularity, and flatulence, all statistically significantly better than the placebo group.\textsuperscript{11} No adverse effects were reported for either dose of the Bl019 strain.

Strain Bi07 may also benefit occasional constipation. In a controlled clinical trial, women aged 20–60 years and complaining of occasional constipation were randomly assigned to receive either 100 million CFU per day of Bi07 prepared in 30 grams of a cheese, or the cheese by itself as a placebo, for 4 weeks.\textsuperscript{18} Before and at the end of the trial they rated their complaints on a detailed questionnaire based on the Rome III criteria endorsed by the American Gastroenterological Association.\textsuperscript{20} When compared against the cheese-only group, the Bi07 group showed significantly more improvement in ease of defecation and frequency of bowel movements.

**Important for Healthy Immune Response***

In a controlled clinical trial, healthy subjects aged 60–84 years consumed either milk strain Bl019 at 5 billion CFU per day, or milk by itself.\textsuperscript{15} After 3 weeks their blood was drawn, then the “natural killer” (NK) cells were identified and counted for their relative proportions in the blood. Samples of NK cells were tested for killing capacity by incubating them with carefully selected “target cells”. The Bl019 group showed significant increases over the control group, both in the proportion of NK cells in their blood and in their NK cell killing capacity. Subjects older than 70 years who received Bl019 showed significantly greater improvement in NK capacity than those subjects younger than 70 years.

In another controlled clinical trial by the same research group, healthy subjects aged 63–84 years were randomly assigned to receive Bl019 in milk, at either 50 billion CFU per day or 5 billion CFU per day.\textsuperscript{16} After 3 weeks their blood was drawn, various immune cell types were identified and counted, and immune “phagocytes” (cells that literally “eat” their prey) were studied in depth.

In this trial Bl019 worked just as well at the 5 billion CFU dose as it did at the dose of 50 billion CFU.\textsuperscript{16} Total immune T lymphocyte cells significantly increased at both doses. So did the relative proportion of phagocytes in the blood, and their phagocyte activity. This second trials findings nicely complement those from the first, because phagocyte cell activity typically works complementary to NK activity for healthy immune response. The evidence from these two clinical trials with strain Bl019 seems unequivocal: dietary supplementation with Bl019 at 5 billion CFU per day can promote healthy immune function.

Strain Bi07 also can improve immune phagocyte cell activity. In a double-blind trial with subjects older than 60 years (oldest age not specified), Bi07 at 1 billion CFU per day was compared against a placebo, for 21 days.\textsuperscript{21} Bi07 increased phagocyte activity significantly more than did the placebo.

Strains Bl04 and La14 themselves may promote healthy immune function. In a small European clinical trial, healthy subjects aged 18–62 years consumed 20 billion CFU per day of Bl04, La14, 5 other probiotic strains, or a placebo, for 3 weeks.\textsuperscript{12} On days 7 and 14 into the trial the subjects received a vaccine, intended to trigger a healthy immune response.

On day 21 blood samples were collected. Compared to the placebo group, subjects who received Bl04 or La14 showed significantly higher blood levels of IgG (immunoglobulin type G), an antibody predictably associated with immune response to vaccination. The researchers concluded these two probiotic strains had potential as “adjuvants” – agents that help to amplify a healthy immune response.

**Promotes Intestinal and Whole-Body Health***

The proven benefits of probiotic strains included in Doctor’s Best Probiotic\textsuperscript{TM}, both for digestive and other GI health and for healthy immune function, when combined with their status as genetically defined and internationally recognized probiotics, strongly recommend this product for addition to everyone’s dietary supplementation regimen. The consumer of this product can be confident of its identity, safety, potency, and capacity to contribute to their wellness and long-term wellbeing.

This product has a guaranteed minimum potency of 20 billion Colony Forming Units (CFU) in the one capsule recommended daily dose. It is vegan, non-GMO, gluten free, and does not require refrigeration. Take one capsule daily, with a meal, or higher doses as recommended by a nutritionally-informed physician. Clinical observations suggest that ongoing daily intake of probiotics is necessary to ensure the most benefit, especially in the elderly.

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Scientific References