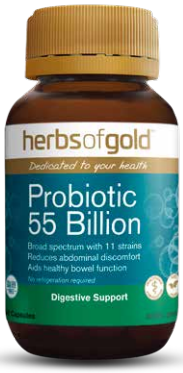
Probiotic 55 Billion



30 / 60 capsules

VGN B P

Herbs of Gold Probiotic 55 Billion is a high-strength, broad spectrum combination of 11 different probiotics sourced from Danisco® to support friendly intestinal flora and digestive system health.

Each capsule contains not less than 55 billion CFU from:

Lactobacillus rhamnosus (HOWARU® HN001)	6 billion CFU
Lactobacillus rhamnosus (GG)	5 billion CFU
Lactobacillus acidophilus (FloraFIT® La-14)	300 million CFU
Bifidobacterium lactis (HOWARU® HN019)	2 billion CFU
Bifidobacterium lactis (FloraFIT® Bl-04)	200 million CFU
Lactobacillus paracasei (FloraFIT® Lpc-37)	24.9 billion CFU
Lactobacillus plantarum (FloraFIT® Lp-115)	15 billion CFU
Lactobacillus salivarius ssp salivarius (FloraFIT® Ls-33)	300 million CFU
Lactobacillus gasseri (FloraFIT® Lg-36)	200 million CFU
Streptococcus thermophilus (FloraFIT® St-21)	1 billion CFU
Saccharomyces cerevisiae (Boulardii)	100 million CFU

Does not contain egg, milk, peanut, soy, tree nuts, animal products, gluten, lactose or artificial colours, flavours or preservatives.

DIRECTIONS FOR USE

Adults and children over 12 years - Take 1 capsule daily, with food, or as directed by your health professional.

FEATURES & BENEFITS

- ✓ Broad spectrum with 11 strains
- ✓ High-strength
- ✓ Room stable – no refrigeration required
- ✓ Restores beneficial gut flora
- ✓ Supports healthy bowel function
- ✓ Relieves digestive discomfort
- ✓ Supports immune system health
- ✓ Dairy free
- ✓ Survives stomach acid & bile
- ✓ Danisco® probiotics – trusted worldwide by manufacturers
- ✓ Healthy intestinal bacteria
- ✓ Digestive support
- ✓ Immune support
- ✓ Vegetarian & vegan friendly

TECHNICAL INFORMATION

- Probiotics are microorganisms proven to exert health-promoting influences in humans. The term 'probiotic' means 'for life'.
- In order for probiotics to have a therapeutic effect, they need to have the following characteristics: gastric acid and bile salt stability; an ability to adhere to the intestinal mucosa; and an ability to colonise the intestinal tract.
- Probiotic 55 Billion contains 11 different strains that survive both stomach acid and bile and adhere to the intestinal mucosa. Good adherence to intestinal mucosa is important as it prolongs the time a probiotic strain can reside in the intestine, giving it an opportunity to modulate the immune response and protect against enteric pathogens by limiting their ability to colonise the intestine.
- Probiotic 55 Billion contains studied probiotic strains supplied by Danisco®, a supplier trusted by some of the world's most recognised manufacturers. Danisco® utilises patented stabilisation technology to improve shelf-life and to stabilise the phospholipid bilayer of the probiotic cell membrane, so that all the strains are room-stable and do not require refrigeration.
- Probiotic 55 Billion contains Saccharomyces boulardii (SB), a live yeast with probiotic activity that helps maintain a healthy digestive tract and supports healthy immune function. SB reaches the intestine and is usually cleared within 3-5 days after supplementation is discontinued[1].

Intestinal microbiota

- The human gastrointestinal tract is populated by bacteria, archaea, yeasts and fungi, which are collectively referred to as the gastrointestinal (GI) microbiota. The microbiota has several important functions in maintaining human health, including providing the host with nutrients and protecting from harmful microbes. It is involved in many metabolic processes, including the fermentation of undigested carbohydrates into short-chain fatty acids, lipid metabolism and vitamin synthesis.
- The ecological balance of the intestinal microbiota can be disturbed by environmental or physiological factors, such as antibiotics, stress and diet.
- Probiotic 55 Billion helps maintain a balanced, healthy composition of the intestinal microbiota by re-establishing friendly intestinal bacteria and inhibiting the growth of unwanted intestinal bacteria. Strains of lactic acid bacteria such as Lactobacillus sp. and Bifidobacterium sp. inhibit pathogenic bacteria through competition for nutrients and adhesion sites, production of antimicrobial substances, and enhancement of the immune system[2].
- Lactobacillus rhamnosus HN001, Bifidobacterium lactis HN019, Lactobacillus acidophilus La-14, Lactobacillus salivarius Ls-33, Lactobacillus paracasei Lpc-37 and Lactobacillus plantarum Lp-115 have displayed in vitro inhibition of common pathogens.

Bowel function

- Probiotic 55 Billion can improve bowel regularity and reduce constipation.
- A systematic review and meta-analysis found that probiotic supplementation was associated with decreased intestinal transit time in relation to controls ($p<0.001$) with medium to large treatment effects identified for Bifidobacterium lactis HN019 ($p<0.01$)[3].
- In a triple-blinded, randomised, placebo-controlled study, Bifidobacterium lactis HN019 (1.8 billion cfu/day) decreased intestinal transit time by 25% over the 14-day study period ($p=0.01$)[4].

Digestive system health

- Probiotic 55 Billion supports healthy digestive function by maintaining healthy, balanced intestinal flora.
- Specifically, Bifidobacterium lactis HN019 has been found to relieve functional gastrointestinal symptoms in adults. A triple-blind, randomised, placebo-controlled study found that supplementation with 1.8 billion CFU/day Bifidobacterium lactis HN019 led to statistically significant improvements in regurgitation, flatulence ($p=0.05$), nausea, irregular bowels ($p=0.01$), abdominal pain, gurgling and constipation ($p=0.001$)[5].

Immune health

- Probiotic 55 Billion helps maintain healthy immune function. The

1 McFarland, L. V. (2010). Systematic review and meta-analysis of Saccharomyces boulardii in adult patients. *World Journal of Gastroenterology: WJG, 16*(18), 2202.
2 Abbasi, M., Dolatabadi, S., Ghorbannezhad, G., Sharifi, F., & Rahimi, H. R. (2020). The role of probiotics in inhibition mechanism of methicillin-resistant staphylococcus aureus. *McGill Journal of Medicine: MJM: An International Forum for the Advancement of Medical Sciences by Students 18*(1).
3 Miller, L. E., & Ouwehand, A. C. (2013). Probiotic supplementation decreases intestinal transit time: meta-analysis of randomised controlled trials. *World Journal of Gastroenterology, 19*(29), 4718-4725.
4 Waller, P. A., Gopal, P. K., Leyer, G. J., Ouwehand, A. C., Reifer, C., Stewart, M. E., & Miller, L. E. (2011). Dose-response effect of Bifidobacterium lactis HN019 on whole gut transit time and functional gastrointestinal symptoms in adults. *Scandinavian Journal of Gastroenterology, 46*(9), 1057-1064.
5 Waller, P. A., Gopal, P. K., Leyer, G. J., Ouwehand, A. C., Reifer, C., Stewart, M. E., & Miller, L. E. (2011). Dose-response effect of Bifidobacterium lactis HN019 on whole gut transit time and functional gastrointestinal symptoms in adults. *Scandinavian Journal of Gastroenterology, 46*(9), 1057-1064.

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intestinal microbiota is one of the key elements in the body's immune defence system. Probiotics have an ability to modulate both cellular and humoral immunity and can stimulate various aspects of the immune system, including phagocytic function of macrophages, natural killer (NK) cells, monocytes and neutrophils[6].

- The strains in Probiotic 55 Billion show beneficial modulation of immune function.
- Bifidobacterium lactis HN019 has consistently shown benefits on markers of immune function in both adults and the elderly, with results suggesting the greatest benefit would be likely to be experienced by consumers with poorer immune status[7].
- Lactobacillus rhamnosus HN001 has been shown to enhance natural immune function in animal studies, in vitro studies and human studies. Three weeks' supplementation with Lactobacillus rhamnosus HN001 significantly enhanced the activity of NK cells[8].

Allergy

- Both Lactobacillus rhamnosus (GG) and Lactobacillus rhamnosus HN001 help maintain a healthy response to allergens. Numerous studies have demonstrated that supplementation with these strains reduces the cumulative prevalence of eczema in infants and children.
- A double-blind, randomised, placebo-controlled trial found that maternal supplementation with Lactobacillus rhamnosus HN001 6 billion cfu/day from 35 weeks' gestation until 6 months of breastfeeding, and infant supplementation from birth until 2 years halved the cumulative prevalence of eczema at 2 and 4 years, and this effect was still present at age 6[9].

Antibiotic use

- Disturbed intestinal flora is commonly associated with antibiotic use. Probiotic 55 Billion can help restore healthy GI microflora after antibiotic use. The chosen strains show resistance to certain antibiotics and may be beneficial when taken with antibiotic therapy to minimise side-effects. Lactobacillus rhamnosus (GG) and Saccharomyces Boulardii have been found to reduce the risk of antibiotic-associated diarrhoea. The susceptibility of the probiotic strains to different antibiotics are detailed in the table below (Table 1).

DRUG INTERACTIONS

- Co-administration with antibiotics may reduce side effects – beneficial interaction likely.
- Caution with antifungal medications – may decrease effectiveness of SB. Separate dose.

CAUTIONS

- Use with caution in the immunocompromised, as they may be at increased risk of adverse reactions.
- Contraindicated in infants less than 12 months old due to immature metabolism of lactic acid.

SIDE EFFECTS

- None noted at the recommended dose.

COMPANION PRODUCTS

- Berberine ImmunoPlex
- Digest-Zymes
- Gut Care
- Quercetin Complex

Table 1: Susceptibility of probiotic strains to common antibiotics

Antibiotic	HN001	LGG	La-14	HN019	BI-04	Lpc-37	Lp-115	Ls-33	Lg-36	St-21	SB
Amoxicillin	TBD	TBD	S	TBD	S	S	S	S	TBD	S	R
Ampicillin	S	S	S	S	S	S	S	S	TBD	S	R
Ceftazidime	TBD	TBD	I	TBD	S	R	R	R	TBD	S	R
Chloramphenicol	S	S	I	S	I	I	R	R	TBD	R	R
Ciprofloxacin	TBD	TBD	R	TBD	R	R	R	R	TBD	R	R
Clindamycin	TBD	TBD	I	TBD	I	S	S	S	TBD	R	R
Cloxacillin	S	R	S	R	S	S	R	R	TBD	S	R
Dicloxacillin	TBD	TBD	S	TBD	S	S	R	R	TBD	R	R
Erythromycin	S	S	S	S	I	S	I	I	TBD	I	R
Gentamicin	R	R	R	R	R	R	R	R	TBD	R	R
Imipenem	TBD	TBD	R	TBD	R	R	R	R	TBD	R	R
Kanamycin	R	R	R	R	R	R	R	R	TBD	R	R
Neomycin	R	R	R	R	R	R	R	R	TBD	R	R
Nitrofurantoin	TBD	TBD	R	TBD	R	R	R	R	TBD	R	R
Penicillin G	S	S	S	S	S	S	R	S	TBD	S	R
Polymixin B	R	R	R	R	R	R	R	R	TBD	R	R
Rifampicin	S	S	S	S	S	S	S	R	TBD	S	R
Streptomycin	R	R	R	R	R	R	R	R	TBD	R	R
Sulfamethoxazole	TBD	TBD	R	TBD	R	R	R	R	TBD	R	R
Tetracycline	S	S	R	S	R	S	R	R	TBD	S	R
Trimethoprim	TBD	TBD	R	TBD	R	R	R	R	TBD	R	R
Vancomycin	R	R	S	S	S	R	R	R	TBD	S	R

Key: R = Resistant I = Intermediate S = Susceptible TBD = To be determined

6 Drisko, J. A., Giles, C. K., & Bischoff, B. J. (2003). Probiotics in health maintenance and [...] *Alternative Medicine Review, 8*(2), 143-155.
7 Sanders, M. E. (2006). Summary of probiotic activities of Bifidobacterium lactis HN019. *Journal of Clinical Gastroenterology, 40*(9), 776-783.
8 Danisco® Technical Memorandum. *Lactobacillus rhamnosus HN001 – a probiotic with proven efficacy.*
9 Wickens, K., Stanley, T. V., Mitchell, E. A., Barthow, C., Fitzharris, P., Purdie, G., ... & Crane, J. (2013). Early supplementation with Lactobacillus rhamnosus HN001 reduces eczema prevalence to 6 years: does it also reduce atopic sensitization?. *Clinical & Experimental Allergy, 43*(9), 1048-1057.