PROBIOMED™

SHELF-STABLE, BROAD SPECTRUM PROBIOTICS AVAILABLE IN TWO POTENCIES: 50 AND 100 BILLION CFUS

30 VEGETARIAN CAPSULES | NPN80087177 | PBM050-CN
30 VEGETARIAN CAPSULES | NPN80087159 | PBM100-CN

Designs for Health's ProbioMed™ high potency probiotics formulations consist of ten of the most highly-researched probiotic strains in a unique moisture-resistant, desiccant-lined packaging to ensure strain survivability without the need for refrigeration. The diversity of these specific strains target gastrointestinal health to address common gastrointestinal conditions, bowel function, and varying degrees of dysbiosis associated with lifestyle or life-stage, antibiotic therapy, dietary imbalances or stress. This family of products also possesses specific strains that have strong immunomodulatory actions to mature and enhance the immune system during all life stages. These formulations are offered in two potencies: 50 and 100 billion CFUs. This allows for a highly diverse range of use and extensive titration options.

Common problems associated with probiotic supplementation include strain identification and disclosure of individual counts, strain integrity and stability during storage and internal delivery, resistance/tolerance to stomach acid and bile salts, adherence to intestinal walls, and antibiotic resistance. These high potency formulations have been developed to address these common challenges and maximize their potential. Each probiotic strain and count has been carefully selected after extensive review of scientific literature to ensure superior viability in low pH conditions and in the presence of bile salts.

HIGHLIGHTS

- Combines 10 strains at significant dosages
- Evidence-based formulations – the strains are heavily researched and validated
- Specific strain identification with disclosed CFU count
- Shelf stable – significant overage ensures long shelf life and guarantees delivery of stated CFU count
- State-of-the-art moisture, oxygen, and light resistant, desiccant-lined packaging to protect probiotics and extend shelf life, and eliminate the need for refrigeration
- Superior tolerance/resistance to stomach acid and bile salts
- 50 B & 100 B capsules feature delayed release technology for optimal survivability from stomach acid and properly-timed release of the probiotics in the lower GI tract
- Dairy-free formulations

PROBIOTIC STRAINS

Lactobacillus acidophilus (DDS®-1): is a potent immunomodulatory probiotic strain shown to enhance immune activity by increasing regulatory T cells, inducing chemokine and cytokine response, stimulating dendritic cells to promote Th1/Th2/Th3 immunity, and improving IgA response.[1-5] Studies show *L. acidophilus* DDS-1 may significantly reduce the incidence and duration of cold and flu symptoms, improves colitis, and enables immune maturation in fetal enterocytes.[2-4, 6-7] It

has also been shown to improve microbiome diversity following antibiotic therapy and may be effective against C. difficile, candidiasis, and SIBO, while reducing constipation and increasing bowel frequency.[8-19]

Lactobacillus plantarum (UALp-05™): inhibits the invasion of pathogenic *E. coli*, especially when combined with other probiotic strains, and effectively reduces disturbance of the microbiome resulting from antibiotic therapy.[20-21] Studies show it reduces abdominal pain, bloating and other gastrointestinal symptoms associated with IBS and colitis.[22-23] As an immunomodulatory agent, *L. plantarum* enhances the IgG response and may improve the body's response to influenza in elderly individuals, especially.[24-25]

Bifidobacterium lactis (Bl-04): has been present in human food for decades and is broadly recognized for its key role in the human intestinal microflora throughout life. Its anti-inflammatory properties may be useful in attenuating the symptoms of colitis, while supporting the body against allergies and allergic rhinitis.[23, 26] It protects and restores the microbiome following antibiotic therapy and boosts the body's IgG response.[9, 26]

Lactobacillus casei (UALc-03™): improves systemic and mucosal immune responses, reducing the occurrence of infections in elderly, especially.[27-28] Its anti-inflammatory properties are noted as it lowers hsCRP, may reduce the occurrence of necrotizing enterocolitis, modifies the expression of toll-like receptor in ulcerative colitis, and helps repair aspirin-induced bowel injury.[29-32] *L. casei* also may also improve insulin sensitivity.[33]

Bifidobacterium breve (UABbr-11™): is a normal commensal microorganism that may prevent and improve constipation, abdominal bloating, and other symptoms of ulcerative colitis and necrotizing enterocolitis.[32, 34-35] It also helps maintain fasting glucose, decreases hsCRP, and increases plasma glutathione.[36]

Lactobacillus paracasei (Lpc-37): can inhibit pathogenic *salmonella*, *S. aureus*, *E. coli*, and listeria, while protecting and restoring the microbiome following antibiotic therapy.[9-10] As an immunomodulatory agent, it induces IL-10, (TNF)-α, (IFN)-γ, and IL-12, and enhances the IgG and IgM response.[24] Colitis models show a reduction in intestinal inflammation with *L. paracasei* therapy.

Lactobacillus salivarius (UALs-07™): helps mitigate inflammatory symptoms, and modulates cytokine production and the cellular response to pathogenic challenges while restoring a disrupted microbiome.[9, 37] It may also improve oral health by reducing gum bleeding and physiologic halitosis while increasing resistance to caries.[38-39]

Lactobacillus rhamnosus (HN001): is a potent immunomodulatory strain that increases interleukin and cytokine production, phagocytosis and NK-cell activity, sIgA secretion, fetal immunity, and immunomodulatory components of breastmilk.[12, 40-42] It may be effective against *C. difficile*, *E. coli* O157:H7, and *S. typhimurium*.[43-45]

Bifidobacterium bifidum (UABb-10™): may improve functional constipation and symptoms of IBS, including abdominal pain, bloating, belching, flatulence, and diarrhea.[46] Upper gastrointestinal symptoms associated with *H. pylori* infections also may benefit from *B. bifidum*.[47]

Bifidobacterium longum (UABl-14™): improves the composition and metabolic activities of colonic bacterial communities and immune parameters, which may help the symptomatic effects of celiac disease, IBS, and functional constipation.[46, 48-49] Studies show *B. longum* reduces TNF-alpha, CRP, serum AST, insulin resistance, serum endotoxin, and steatosis in patients with non-alcoholic steatohepatitis.[50]

PROBIOTIC STRAIN COMPARISON CHART

STRAIN	Low pH Resistance*	Bile Acid Tolerance**	Mucosal Adherence***	L/D Lactic Acid Production†	Immuno-modulation
L. acidophilus (DDS®-1)	Extremely resistant (>90% survival)	Extremely resistant (>90% recovery)	HT-29: +++ Very good Caco-2: +++ Very good	60/40 molar ratio	IL-1, TNF- α, IgA
L. plantarum (UALp-05™)	Extremely resistant (>90% survival)	Extremely resistant (>90% recovery)	HT-29: ++ Good Caco-2: ++++ Excellent	55/45 molar ratio	IgG
B. lactis (BI-04)	Extremely resistant (>90% survival)	Extremely resistant (>90% recovery)	HT-29: +++ Very good Caco-2: +++ Very good	100/0 molar ratio	IL-10, IL-12, IgG
L. casei (UALc-03™)	Extremely resistant (>90% survival)	Extremely resistant (>90% recovery)	HT-29: ++ Good Caco-2: ++++ Excellent	60/40 molar ratio	
B. breve (UABbr-11™)	Tolerant (<60% survival)	Tolerant (<60% recovery)	HT-29: + Fair Caco-2: +++ Very good	100/0 molar ratio	
L. paracasei (Lpc-37)	Very highly resistant (80-89% survival)	Resistant (60-69% recovery)	HT-29: +++ Very good Caco-2: ++++ Excellent	100/0 molar ratio	IL-10, IL-12, TNF- α, IgG, IgM
L. salivarius (UALs-07™)	Highly resistant (70-79% survival)	Very highly resistant (80 - 89% recovery)	HT-29: ++++ Excellent Caco-2: ++++ Excellent	100/0 molar ratio	IL-10, IL-12
L. rhamnosus (HN001)	Highly resistant (70-79% survival)	Highly resistant (70-79% recovery)	HT-29: +++ Very good Caco-2: +++ Very good	100/0 molar ratio	sIgA
B. bifidum (UABb-10™)	Extremely resistant (>90% survival)	Extremely resistant (>90% recovery)	HT-29: ++++ Excellent Caco-2: ++++ Excellent	100/0 molar ratio	
B. longum (UABl-14™)	Highly resistant (70-79% survival)	Very highly resistant (80 - 89% recovery)	HT-29: +++ Very good Caco-2: +++ Very good	100/0 molar ratio	

* Acid resistance after incubation in hydrochloric acid and pepsin (1%) at pH 3 for 1h at 37°C
**Fresh cultures diluted and plated onto MRS agar plates with and without 0.3% bovine oxgall bile salts
***in vitro adherence to two human intestinal cell lines, Caco-2 and HT-29
†Boehringer Mannheim/R-Biopharm D-lactic acid/L-lactic acid UV-method

PROBIOMED™ FORMULATIONS MAY BE USEFUL FOR:

- Minimizing the side effects of antibiotics
- Reestablishing a healthy and diverse microbiome
- Alleviating symptoms associated with inflammatory bowel disease/ulcerative colitis
- Enhancing the immune system
- Inhibiting the growth of pathogenic organisms
- Improving constipation and/or diarrhea during all life stages

SUGGESTED DOSAGE IMPLEMENTATION

- ProbioMed™ 50 — 50 Billion CFU: high potency, broad-spectrum maintenance formula for healthy microflora
- ProbioMed™ 100 — 100 Billion CFU: higher potency formula for continuous microflora replenishment

ProbioMed™ 50 Medicinal Ingredients (per capsule):
Probiotic Blend: *Bifidobacterium animalis subsp. lactis* (UABla-12™) (17.8 billion cfu), *Lactobacillus plantarum* (UALp-05™) (8.6 billion cfu), *Lactobacillus acidophilus* (DDS®-1) (5.7 billion cfu), *Lactobacillus casei* (UALc-03™) (3.5 billion cfu), *Bifidobacterium breve* (UABbr-11™) (3.5 billion cfu), *Lactobacillus paracasei* (UALpc-04™) (3 billion cfu), *Lactobacillus rhamnosus* (GG) (3 billion cfu), *Lactobacillus salivarius* (UALs-07™) (2.9 billion cfu), *Bifidobacterium bifidum* (UABb-10™) (1 billion cfu), *Bifidobacterium longum subsp. longum* (UABl-14™) (1 billion cfu) ..... 50 billion cfu

ProbioMed™ 100 Medicinal Ingredients (per capsule):
Probiotic Blend: *Bifidobacterium animalis subsp. lactis* (UABla-12™) (36.4 billion cfu), *Lactobacillus plantarum* (UALp-05™) (18 billion cfu), *Lactobacillus acidophilus* (DDS®-1) (10.8 billion cfu), *Bifidobacterium breve* (UABbr-11™) (7.2 billion cfu), *Lactobacillus casei* (UALc-03™) (7.2 billion cfu), *Lactobacillus paracasei* (UALpc-04™) (6 billion cfu), *Lactobacillus rhamnosus* (GG) (6 billion cfu), *Lactobacillus salivarius* (UALs-07™) (6 billion cfu), *Bifidobacterium bifidum* (UABb-10™) (1.2 billion cfu), *Bifidobacterium longum subsp. longum* (UABl-14™) (1.2 billion cfu) ..... 100 billion cfu

Non-Medicinal Ingredients: Microcrystalline cellulose, Delayed Release Capsule (hydroxypropyl methylcellulose, gellan gum), magnesium stearate (vegetable source), silica. **Recommended Dose:** Children 6-12 years, Adolescents 13-17 years, and Adults ≥ 18 years: Take 1 capsule per day with a meal or as directed by your health care practitioner. If you are on antibiotics, take at least 2-3 hours before or after.

REFERENCES
For a list of references cited in this document, please visit: http://catalog.designsforhealth.com/assets/itemresources/ProbioMed_References.pdf

PROBIOMED™

HIGH-STRENGTH, SHELF-STABLE, DAIRY-FREE PROBIOTICS

WHAT ARE PROBIOTICS?

Probiotics are naturally-occurring friendly bacteria that may enhance health in several key ways, including:

- Assisting with digestion and nutrient assimilation
- Helping inhibit the overgrowth of harmful bacteria
- Supporting the immune system
- Maintaining bowel health and assisting with proper elimination
- Helping restore and maintain balanced flora after antibiotics, which kill the beneficial gut flora

WHY DO WE NEED PROBIOTICS?

Nearly 70% of the immune system is associated with the gastrointestinal (GI) tract through synergistic interactions with various bacteria colonies (flora) that reside in our GI tract to maintain its health and function. Imbalances in this gut flora—either an absence of beneficial bacteria or an overgrowth of unhealthy organisms—can interfere with our quest for optimal health. Abdominal pain, bloating, gas, constipation, diarrhea, and a struggling immune system are some common outcomes of imbalanced gut flora. Antibiotic therapy, illness, poor diet, stress, and environmental toxins affect the health of our gut flora. In the past, regular consumption of fermented foods helped to maintain healthy gut flora, but these foods are increasingly rare in our diet. The combination of unhealthy lifestyles and a lack of fermented foods in the diet makes probiotics an important supplement.

WHY CHOOSE PROBIOMED™?

TRANSPARENCY Designs for Health discloses vital information required to confirm the efficacy of probiotic formulations, including:

- **The specific strains of each probiotic species.** There are many strains of a specific probiotic species, such as Lactobacillus acidophilus, but not all strains impart significant health benefits. Only select, rigorously studied strains are scientifically-proven to survive, adhere, and function in the GI tract.
- **The CFU count per probiotic strain.** CFU (colony-forming units) is the number of organisms able to survive and reproduce in the intestines. Some probiotic formulas may include several strains, but contain large quantities of inexpensive strains, while including insufficient amounts of the more vital strains.
- **The amount of excess CFUs added for each strain.** CFU overage ensures consumers are receiving not less than the stated dose of each probiotic strain, in the event that the initial CFU content decreases during production or storage.

SURVIVABILITY Many commercial probiotics are unable to survive the harsh journey to the intestines and are unlikely to attach to the intestinal walls, where they can grow and function effectively.

- **Acid/Bile Resistance:** ProbioMed™ probiotic strains have been shown to withstand the highly acidic stomach juices and the harsh bile salts they encounter in the small intestine.

- **Gut Adherence:** ProbioMed™ probiotic strains have been carefully selected according to their ability to securely adhere to the intestinal walls, where they can colonize and persist.
- **Shelf Stability:** Live probiotics are fragile organisms that naturally die after production and distribution. This results in many probiotic formulations losing their potency, delivering fewer numbers of beneficial bacteria than expected, and becoming less effective. ProbioMed™ is created with the latest state-of-the-art technology that ensures probiotic strains are alive and effective after packaging and storage for up to 24 months, without the need for refrigeration. Designs for Health guards against any potential loss of probiotic strains by adding extra quantities of each probiotic to guarantee consumers will receive no less than the stated number of strains in each dose.
- **Strain Specificity:** ProbioMed™ contains 10 of the most well-researched probiotic strains – each with a specific, functional strength that collectively enhances and maintains immune and digestive health.
- **Strain Amounts:** High doses of specific probiotic strains are helpful to assist with repair of damaged body systems. ProbioMed™ is designed with large quantities shown to be effective for replenishing the gut flora when intensive recolonization is needed due to antibiotic use and poor health.
- **Antibiotic Resistance:** The strains chosen for ProbioMed™ do not contain antibiotic resistant genes that could inhibit the effectiveness of necessary antibiotic therapy.
- **Innovative, Convenient Packaging:** State-of-the-art desiccant-lined bottles protect probiotics from damaging exposure to moisture, oxygen, and light to extend the shelf life of ProbioMed™ while eliminating the need for refrigeration. Similarly, the convenient stick packs are lined with a film that provides a barrier to moisture, oxygen, and light.
- **Capsule Technology:** 50 B & 100 B capsules feature delayed release technology for optimal survivability from stomach acid & properly timed release of probiotics in the lower GI tract.

PROBIOMED™ PROBIOTICS MAY BE USEFUL FOR:

- Digestive health
- Supporting healthy elimination
- Boosting immunity
- Rebalancing gut flora
- Recolonizing good microbes after antibiotic therapy

SPECIES	STRAIN	HEALTH BENEFITS
Bifidobacterium animalis subsp. lactis	(UABla-12™)	Supports gut health and immunity
Lactobacillus plantarum	(UALp-05™)	Supports digestive health and proper elimination
Lactobacillus acidophilus	(DDS®-1)	Supports immune health and proper elimination; helps maintain proper gut flora
Lactobacillus casei	(UALc-03™)	Supports proper systemic and mucosal (GI lining) immune responses
Bifidobacterium breve	(UABbr-11™)	Supports bowel function and proper elimination
Lactobacillus paracasei	(UALpc-04™)	Supports healthy gut flora and immunity especially following antibiotic therapy
Lactobacillus salivarius	(UALs-07™)	Supports gut and oral health
Lactobacillus rhamnosus	(GG)	Supports immunity; helps maintain proper gut flora
Bifidobacterium bifidum	(UABb-10™)	Supports bowel health and proper elimination
Bifidobacterium longum subsp. longum	(UABl-14™)	Supports immunity; maintains normal function of gut flora

HOW TO TAKE: ProbioMed™ 50 & 100: Take one capsule per day with a meal, or as directed by your health care practitioner.

REFERENCES: For a list of references cited in this document, please visit: http://catalog.designsforhealth.com/assets/itemresources/ProbioMed_References.pdf