

# MICROBIOME

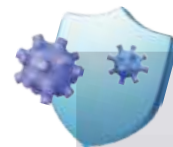
## for a Healthier Tomorrow



Next-  
Generation  
Postbiotics



CDMO  
Solutions

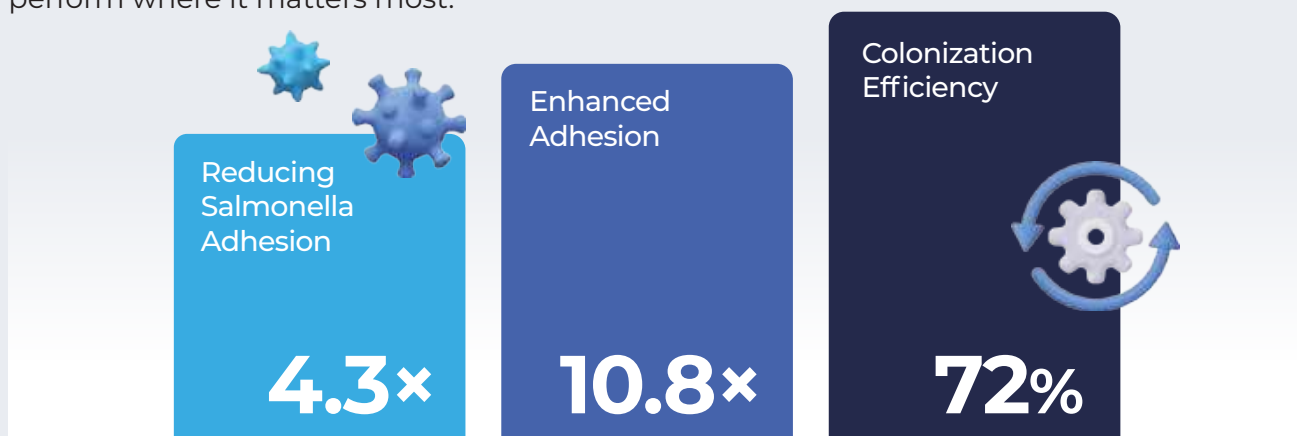


# SHIELD® Probiotics

Quadruple-Coated for Optimal Stability and Delivery

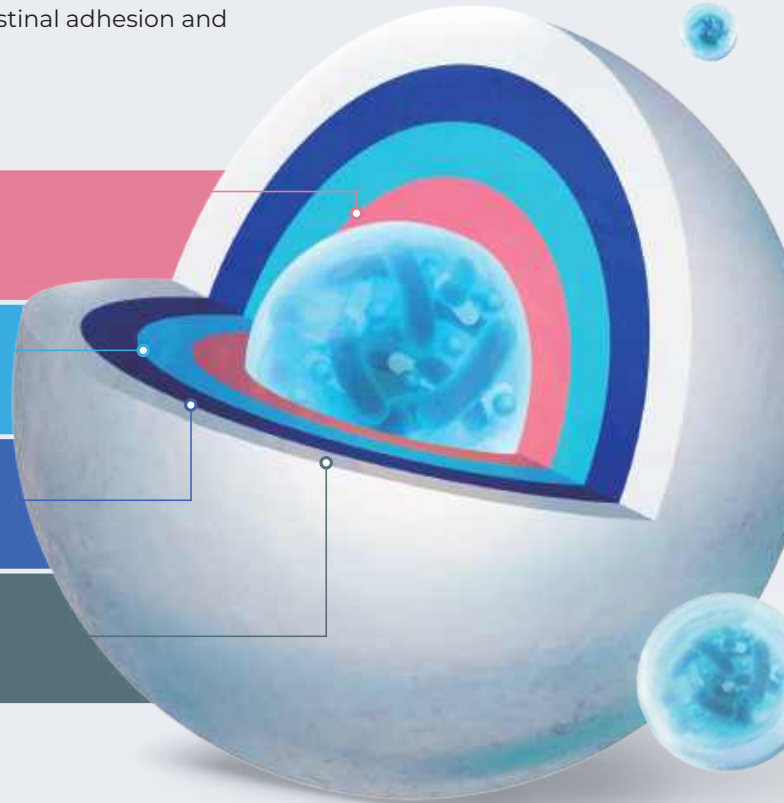






In the competitive probiotic landscape, mere survivability is no longer enough. **ILDONG BIOSCIENCE's Q-Shield® technology** introduces a new standard in probiotic formulation—**quadruple-layered microencapsulation** engineered to protect, deliver, and perform where it matters most.



Quadruple-coated probiotics using Q-Shield® technology demonstrated significantly enhanced functional performance. Adhesion to intestinal epithelial cells improved by up to **10.8 times**, while **colonization efficiency increased to 44–72%**, compared to just 5–35% in uncoated strains. Furthermore, coated probiotics exhibited a **4.3-fold improvement** in competitive exclusion against *Salmonella Typhimurium*, underscoring their enhanced stability and functional delivery in gastrointestinal environments.

**Ref.** A quadruple coating of probiotics for enhancing intestinal adhesion and competitive exclusion of *Salmonella Typhimurium*  
– Journal of Medicinal Food (2022)

- 
-  **Water Soluble Polymer**  
Provides protection against external air and moisture
  -  **Hyaluronic Acid**  
Enhances adhesive ability of probiotics to the intestinal mucosa
  -  **Trehalose**  
Provides protection against thermal and acidic stress
  -  **Yeast Extract**  
Nutrient-rich matrix aiding structural integrity and viability

# SHIELD® Probiotics

Quadruple-Coated for Optimal Stability and Delivery



## Solution for Probiotics

### Customized Blends

We specialize in developing tailor-made probiotic formulations to address your specific functional, regional, and regulatory requirements. Powered by our proprietary **Q-Shield® 4-layer protection**, we ensure optimal stability, efficacy, and consumer confidence—**from strain to solution**.

### Probiotic OEM & CDMO Services

With decades of probiotic expertise, ILDONG BIOSCIENCE offers end-to-end support across product development, scale-up, and manufacturing. Whether it's capsules or stick packs, we deliver **high-quality, probiotic solutions** to meet your brand's goals.

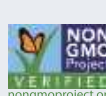
### Pet Nutrition Solutions

We provide **turnkey probiotic formulations** designed specifically for companion animals. From gut health to immunity, our solutions are customized to meet the unique digestive needs of pets—with **proven efficacy and palatability**.

## Areas of Research for Various Indications

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Immunoregulatory Function          | <input checked="" type="checkbox"/> Oral Health           |
| <input checked="" type="checkbox"/> Proteolytic Ability                | <input checked="" type="checkbox"/> Hangover Relief       |
| <input checked="" type="checkbox"/> Vitamin Production                 | <input checked="" type="checkbox"/> Hair Growth           |
| <input checked="" type="checkbox"/> Women's Health                     | <input checked="" type="checkbox"/> Cardiovascular Health |
| <input checked="" type="checkbox"/> Mental/Sleep Support               | <input checked="" type="checkbox"/> Weight Support        |
| <input checked="" type="checkbox"/> Anti-inflammatory & Anti-bacterial | <input checked="" type="checkbox"/> and more              |

## International Certifications



# Scientifically Studied Probiotics for Weight Management & Gut Support

## **B. lactis Fit™** Probiotics for Weight Management

### ▶ Clinically Studied to Reduce Body Fat and Improve Metabolic Biomarkers

B. lactis Fit™ (*Bifidobacterium lactis* IDCC 4301) is a functional probiotic ingredient shown to support healthy weight. Preliminary in vitro and in vivo studies have confirmed that the mechanism of action demonstration by B. lactis Fit™ is the suppression of body fat differentiation, thereby preventing accumulation of body fat cells.



**Ref.** *Bifidobacterium lactis* IDCC 4301 exerts anti-obesity effects in high-fat diet-fed mice model by regulating lipid metabolism – Molecular Nutrition and Food Research (2022)

### ▶ Human Clinical Highlights

12 Weeks,  
93 Subjects  
Randomized  
Placebo- Controlled  
Double Blind

Daily dose of  
**5B CFU**

Significant  
reduction in  
total fat &  
trunk fat

Significant  
improvement in  
AIP and serum  
triglycerides

Positive  
correlation  
between  
fat mass and  
adipokines

**Ref.** *Bifidobacterium lactis* IDCC 4301(B. lactis Fit™) supplementation effects on body fat, serum triglyceride, and adipokine ratio in obese women; a randomized clinical trial – Food and Function (2024)

## **L. rhamnosus IDCC 3201** Probiotics for Gut Restoration

### ▶ Clinically Studied to Relieve Gut Discomfort

*L. rhamnosus* IDCC 3201 is an extensively studied probiotic ingredient shown to support gut health, alleviate digestive discomfort, and promote regular bowel movements. This strain is ideal for formulations targeting gastrointestinal wellness, daily digestive support, or post-antibiotic recovery.

### ▶ Human Clinical Highlights

8 Weeks,  
30 Subjects  
Randomized  
Placebo- Controlled  
Double Blind

Daily dose of  
**10B CFU**

Significant  
improvement  
in abdominal  
bloating and  
bowel habits

Significant  
improvement  
in QOL

Significant  
increase in  
microbiome  
diversity

**Ref.** Effect of *Lacticaseibacillus rhamnosus* IDCC 3201 on irritable bowel syndrome with constipation: a randomized, double-blind, and placebo-controlled trial – Scientific Reports (2024)



# Clinically Studied Postbiotics for Cholesterol, Immune and Gut Health

## BBR4401® Postbiotics for Cholesterol Support

### Clinically Studied to Support Healthy Cholesterol Levels

BBR4401® is the heat-killed form of the probiotic *Bifidobacterium breve* IDCC 4401. This functional postbiotic ingredient works by physically binding to intestinal bile acids and cholesterol, in which the bound bile acids and cholesterol are then excreted from the body through defecation. This depletion of bile acids stimulates the liver to convert more bile acids from LDL-cholesterol to compensate, contributing to reduced cholesterol levels.

### Human Clinical Highlights

12 Weeks,  
60 Subjects  
Randomized  
Placebo- Controlled  
Double Blind

Daily dose of  
**10B or 100B cells**

Significant  
decrease in  
LDL after  
**4 weeks**  
\*in the high dosage group

Significant  
decrease  
ApoB/ApoA1  
by **12.2%**

Significant  
improvement in  
distension and  
runny feces

**Ref.** A randomized, double-blind, placebo-controlled trial to evaluate the cholesterol-lowering effect of BBR4401 in adults with moderate hypercholesterolemia – Fermentation (2023)

## RHT3201® Postbiotics for Immune and Gut Support

### Clinically Studied to Promote Immune Function

RHT3201®, derived from the probiotic strain *Lactobacillus rhamnosus* IDCC 3201, is a functional postbiotic produced using Ildong's patented tyndallization process. This method utilizes optimal heat and pressure conditions to inactivate microbial cells while preserving and extracting their beneficial metabolites. Clinically studied for its role in supporting immune function, RHT3201 also shares the gut health benefits associated with its original probiotic strain. Its effectiveness in promoting digestive health has been consistently recognized and will be further validated in an upcoming clinical publication.

### Human Clinical Highlights

12 Weeks,  
66 Subjects  
Randomized  
Placebo- Controlled  
Double Blind

Daily dose of  
**10B cells**

Significant  
decrease in  
serum ECP  
and IL-31

Significant  
decrease  
inflammatory  
biomarkers

No  
Reported  
Adverse  
Effects

**Ref.** A randomized trial of *Lactobacillus rhamnosus* IDCC 3201 tyndallizate (RHT3201) for treating atopic dermatitis – Pediatric Allergy and Immunology (2020)

### Metabolite Profile

Contains 16 major metabolites, known for their ability to regulate immune function

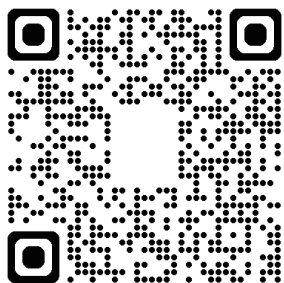
Compound	Function
1. Lactic acid	Modulation of inflammatory immune responses, moisturizing effect and lighten hyperpigmentation
2. Acetic acid	Alleviate immune responses, keratolytic effect
3. Glutamic acid	Optimize immune functions of the gut, maintain pH of the skin

+ 13 more



# Proprietary Strain List

Genus	Strain	Available Potencies (CFU/g)
<i>Lactobacillus</i>	<i>L. gasseri</i> IDCC 3101	50B
	<i>L. acidophilus</i> IDCC 3302	100B, 200B
	<i>L. bulgaricus</i> IDCC 3601	50B
	<i>L. helveticus</i> IDCC 3801	100B
	<i>L. johnsonii</i> IDCC 9203	100B
<i>Lacticaseibacillus</i>	<i>L. rhamnosus</i> IDCC 3201	100B, 200B, 300B, 500B
	<i>L. casei</i> IDCC 3451	100B, 200B, 300B
	<i>L. paracasei</i> IDCC 3401	100B
<i>Limosilactobacillus</i>	<i>L. reuteri</i> IDCC 3701	100B, 200B
	<i>L. fermentum</i> IDCC 3901	50B
<i>Lactiplantibacillus</i>	<i>L. plantarum</i> IDCC 3501	100B, 300B, 400B
<i>Ligilactobacillus</i>	<i>L. salivarius</i> IDCC 3551	100B
<i>Lactococcus</i>	<i>Lc. lactis</i> IDCC 2301	100B, 300B
<i>Enterococcus</i>	<i>E. faecium</i> IDCC 2102	100B, 300B, 500B, 600B
<i>Streptococcus</i>	<i>S. thermophilus</i> IDCC 2201	100B
<i>Bifidobacterium</i>	<i>B. longum</i> IDCC 4101	50B, 100B
	<i>B. bifidum</i> IDCC 4201	100B
	<i>B. lactis</i> IDCC 4301	100B, 300B
	<i>B. breve</i> IDCC 4401	100B, 200B, 300B
<i>Bacillus</i>	<i>B. subtilis</i> IDCC 1101	100B
	<i>B. coagulans</i> IDCC 1201	100B, 150B



## ILDONG BIOSCIENCE CO., LTD.

17, Poseunggongdan-ro, Poseung-eup, Pyeongtaek-si,  
Gyeonggi-do, Republic of Korea

**Tel** +82-2-6956-3113

**Email** [bioexport@ildong.com](mailto:bioexport@ildong.com)

**Website** [www.ildongbio.com](http://www.ildongbio.com)



EXCLUSIVELY SOLD IN NORTH AMERICA BY NUTRALLIANCE  
[WWW.NUTRALLIANCE.COM](http://WWW.NUTRALLIANCE.COM) | (844) 410-1400 | [SALES@NUTRALLIANCE.COM](mailto:SALES@NUTRALLIANCE.COM)