

# Sports Probiotics : For Better Performance, Recovery, and Joint Health

## What are sports probiotics? ●●●

Sports probiotics are strains of bacteria that can offset the negative effects of prolonged high-intensity exercise

## How do these sports probiotics work ●●●

- ① Reducing fatigue indicators and increasing aerobic capacity
- ② Improving physical performance
- ③ Alleviating inflammation after exercise
- ④ Improving the absorption of glucose and BCAAs
- ⑤ Supporting upper respiratory tract
- ⑥ Reducing perceived muscle soreness

## Why use probiotics in sports nutrition? ●●●

Probiotics and the gut microbiota could play important roles in maintaining normal physiology, psychology, and energy production during exercise, which is crucial to sport performance.



### Great Safety

Less safety concerns



### Balance Gut Microbiota

Modify composition of gut microbiota



### Numerous Effects

Modulate multi organ systems



### Formulation Flexibility

Endless delivery possibilities

## Sports Probiotics

- ✓ *B.lactis* HH-BA68
- ✓ *L.johnsonii* LBJ 456®
- ✓ *L.plantarum* HH-LP56
- ✓ *L.rhamnosus* PB-LR76

## Boost Your Energy

Muscle glycogen(MG) serves mainly as a source of metabolic fuel for your muscles. The greater the MG reserve, the better the endurance of the body, and the longer the exercise duration. In an animal study(Fig 1), MG levels in the probiotic intervention groups ( $10^9$  or  $10^{10}$ CFU/kg) were significantly higher than that in the model group.

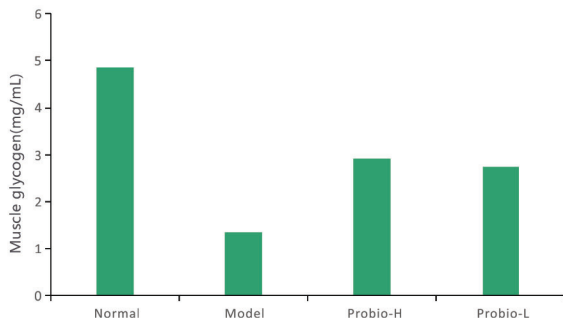


Fig 1. Muscle glycogen levels in mice

## Fight Fatigue

Exercise fatigue is caused by the depletion of stored energy reserves due to high-intensity exercise, resulting in the excessive accumulation of metabolites related to fatigue. In an animal study(Table 1), we found that probiotic treatment ( $10^9$  or  $10^{10}$ CFU/kg) could effectively reduce accumulation of blood urea nitrogen(BUN) and lactic acid(LA), thereby relieving fatigue.

Table 1. The BUN and LA levels in mice

Group	BUN(mmol/L)	LA(mmol/L)
Normal	3.35	2.08
Model	7.40	6.52
Probio-H	3.62	3.81
Probio-L	5.37	4.95

## Improve Joint Health

Arthritis causes joint swelling and tenderness, leading to pain and inflammation. In an animal study(Fig 2), LBJ 456® treatment ( $10^9$ CFU/ml) significantly reduced levels of the pro-inflammatory cytokines IL-1 $\beta$  and IFN- $\gamma$ , and elevated the levels of the anti-inflammatory cytokines TGF $\beta$  and IL-10. It suggests that LBJ 456® may play a crucial role in arthritis pathogenesis and diseases activity modulation.

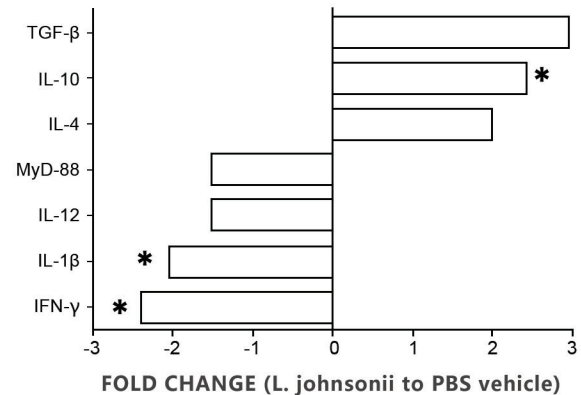


Fig 2. Levels of cytokines

## Scientifically-Proven Formula

Main Ingredients: probiotic blend, leucine, isoleucine, valine, collagen peptide, multi vitamins, multi minerals

## Recommended Human Daily Intake

For a 70kg adult:  $2.0 \times 10^{10}$ CFU/day

## Wide Applications

Nutraceuticals: Capsule, chewable tablet, chewing gum, powder

## Product Quality

