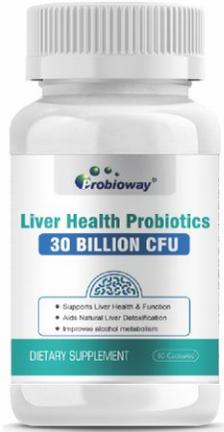


Liver Health Probiotics



Supplement Facts

Serving Size: 1 vegetarian capsule		
Servings Per Container: 60		
Amount Per Serving		%DV*
Probiotic Blend	30 Billion CFU	†
<i>Lactocaseibacillus casei</i> PB-LC39		
<i>Lactobacillus helveticus</i> HH-LPH17		
<i>Lactiplantibacillus plantarum</i> HH-LP56		
<i>Lactobacillus acidophilus</i> HH-LA26		
*Daily Value(DV) not established		

Other Ingredients: stachyose, *Ampelopsis grossedentata* leaves powder, amomi fructus extract, corn oligopeptides powder, apple cider vinegar powder, inulin, microcrystalline cellulose, multi-vitamins, taurine, magnesium stearate, silica.

- ✓ Improves alcohol metabolism.
- ✓ Aids Natural Liver Detoxification.
- ✓ Formulated with Chinese herbal extracts to support gastrointestinal health.

Directions: For best results, take one capsule per day for at least two weeks.

Consumer Study

In the consumer study, 45 adults (men and women) between the age 35 to 55 years were recruited to the study and asked to consume the Liver Health Probiotic capsule once daily for 21 days and send the filled questionnaire. The table below demonstrates the improvement of discomfort in the participants.

Discomfort	%adults who felt improvement
Fatigue	80%
Skin problem	40%
Hangover	72%

25 Years of expertise in probiotics

The Service Creates Value

Probioway Co., Ltd
Zhengzhou H&H Bioengineering Co., Ltd
☎ (86)-21-61673616
📍 Building B-10D, Pudong Avenue 1089, Shanghai, China 200135
✉ pbw@probioway.com
🌐 <http://www.probioway.com>



Alibaba Shop



Website

PROBIOTICS ^{R&D}
RESEARCH AND DEVELOPMENT

Liver Health Probiotics



- Reduce alcohol-related liver damage
- Improve cholestatic liver disease

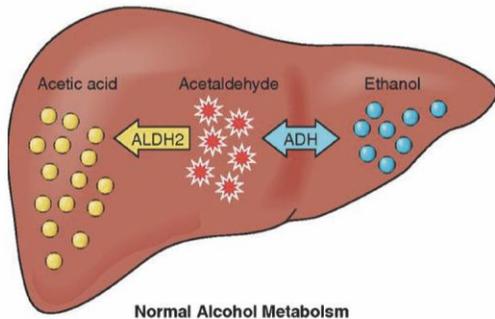
Probioway Co., Ltd
Zhengzhou H&H Bioengineering Co., Ltd

Gut-liver axis

The gut-liver axis refers to the bidirectional relationship between the gut and its microbiota, and the liver, resulting from the integration of signals generated by dietary, genetic and environmental factors. This reciprocal interaction is established through the vascular route of the portal vein that carries gut-derived products directly to the liver, and the liver feed-back route of bile and antibody secretion to the intestine. The intestinal mucosal and vascular barrier is the functional and anatomical structure that serves as a playground for the interactions between the gut and the liver, limiting the systemic dissemination of microbes and toxins while allowing nutrients to access the circulation and to reach the liver.

Alcohol metabolism

Most of the alcohol consumed is metabolized in the liver by alcohol dehydrogenase (ADH), which catalyzes the oxidation of alcohol to acetaldehyde, and by aldehyde dehydrogenase (ALDH), which metabolizes acetaldehyde to form acetic acid. The acetaldehyde produced during the oxidation process accumulates, rather than alcohol itself, and causes liver cell damage and hangover.



Cholestasis

Cholestasis is a pathological state in which bile synthesis, secretion, and excretion are impaired, rendering bile unable to carry out normal liver intestinal circulation. The accumulation of bile exceeds the limits of normal liver cells, resulting in cell injury to the liver parenchyma, toxic damage to the biliary tree, and subsequent obstruction of bile inflow or outflow.

Proven Efficacy

Probiotic Strains

L. casei PB-LC39

Origin: isolated from traditional fermented milk in Qinghai Province.
Culture Deposit Number: CCTCC M2018886

L. helveticus HH-LPH17

Origin: isolated from traditional dairy product
Culture Deposit Number: CCTCC M2021725

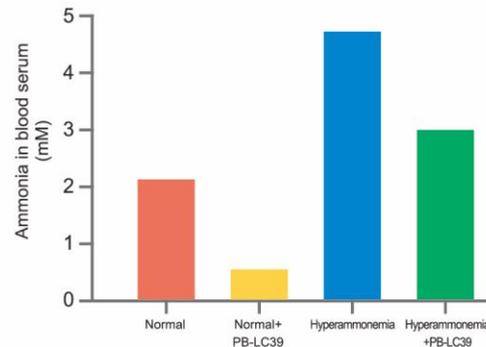
Reduce alcohol-related liver damage

Alcohol metabolism capacity of some probiotic strains were evaluated in vitro by inoculating bacterial suspension into alcohol solution and measuring the residual alcohol concentrations after incubation. Among the tested probiotic strains, *L. casei* PB-LC39 showed high capacity for alcohol metabolism, indicating its potential to protect against alcohol-induced liver damage.

Alcohol metabolism (with 10% alcohol concentration) capacity of probiotic strains

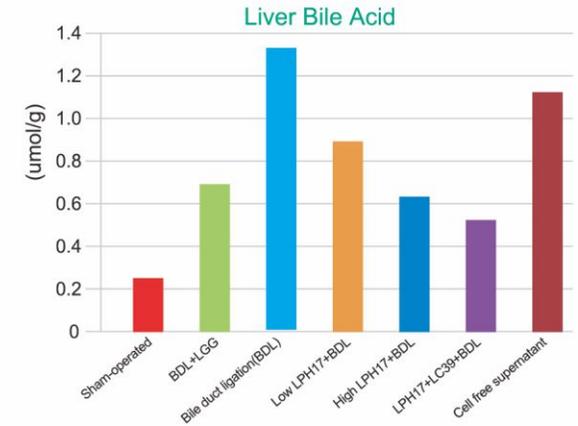
Culture media and strains	Residual alcohol concentrations (mg/ml)			
	Initial	6h	12h	18h
MRS broth	79±0.4	77.1±0.2	76.3±0.3	75.0±0.5
<i>L. casei</i> PB-LC39	79±0.4	75.3±0.1	66.9±0.5	60.7±0.4
<i>L. plantarum</i> HH-LP56	79±0.5	76.6±0.4	75.2±0.1	72.4±0.1
<i>L. acidophilus</i> HH-LA26	79±0.4	76.8±0.3	73.5±0.1	66.2±0.3
<i>L. helveticus</i> HH-LPH17	79±0.3	76.4±0.2	74.4±0.5	70.9±0.1

In hyperammonemic mice, PB-LC39 showed great capacity in reducing serum blood ammonia level, resulting in lower risk of liver damage caused by ammonia.



Improve cholestatic liver disease

In animal study, *L. helveticus* HH-LPH17 showed to prevent accumulation of bile acids in the liver and controlled ALT and AST levels in blood.



Effects of probiotics treatment on Aminotransferase level

Aminotransferase level	Sham-operated	BDL	BDL+LGG	Low LPH17 +BDL	High LPH17 +BDL	LPH17+LC39+BDL	Cell free supernatant
AST(U/L)	77.44	409.44	214.33	287.11	153.22	131.15	341.55
ALT(U/L)	28.62	234.18	134.33	199.22	104.22	99.58	209.63

Patent

- A *L. casei*-containing probiotic formula for alcohol metabolism and detoxification, the preparation method and application thereof. (Patent No.:ZL.201910895017.0)
- *L. helveticus* strain capable of being used for preventing and treating cholestatic liver diseases and application thereof (Patent No.:ZL.202111288184.2)

