

Psychobiotics : For a Better Brain, Mood, and Sleep

What Are Psychobiotics? ...

Psychobiotics are probiotics that confer mental health benefits to the host when ingested in a particular quantity through interaction with commensal gut bacteria.

Action Mechanisms of Psychobiotics ...

- ①Affecting the hypothalamic-pituitary-adrenal(HPA) axis stress response
- ②Secreting neurotransmitters, proteins and SCFAs
- ③Reducing neuroinflammation
- ④Affecting the immune system

Why Use Psychobiotics in Mental Health? ...

Psychobiotics are a novel class of probiotics that possess anxiolytic and antidepressant properties in the host, accompanied by changes in their neural, emotional, and systemic states. They are well-adapted to intestinal environment and naturally modulate gut-brain axis, reducing the chance of adverse reactions.



Great Safety

Less safety concerns



Balance Gut Microbiota

Modify composition
of gut microbiota



Long-Term Efficacy

Modulate gut-brain axis



Mood Relaxation

Anxiety and sleep
support

Psychobiotics

- ✓ *B.breve* HH-BR26
- ✓ *L.gasseri* HH-LG07
- ✓ *L.fermentum* HH-LF392
- ✓ *L.rhamnosus* PB-LR76

GABA Production by Probiotics

Gamma-aminobutyric acid(GABA) is the most common inhibitory neurotransmitter in central nervous system, which is known for producing a calming effect. Certain bacteria can produce GABA from glutamate. In an in vitro study, GABA production was measured in pure cultures using MRS supplemented with monosodium glutamate. The results in Table 1 showed that both *B.breve* HH-BR26 and *L.fermentum* HH-LF392 had GABA producing ability.

Table 1. GABA production

Species	MRS (pH 5.6)	
	24h (mmol/L)	48h (mmol/L)
<i>B.breve</i> HH-BR26	3.26±0.06	1.87±0.15
<i>L.fermentum</i> HH-LF392	6.37±0.27	4.08±0.08

Altering Serotonergic Pathway

Serotonin(5-HT) is known for being one of the main neurotransmitters in the nervous system. It plays a crucial role as modulator of mood, sleep, social behaviors, and learning. In an in vivo study(Fig 1), we found that rats fed with probiotics(1×10^9 CFU/day) showed higher level of serotonin in whole brain homogenates compared with stressed rats in control group.

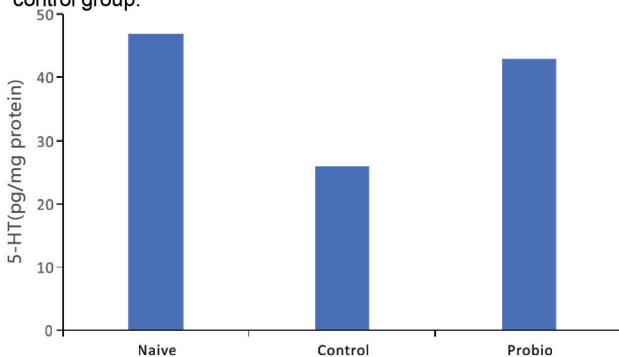


Fig 1. Levels of 5-HT

Scientifically-Proven Formula



Supplement Facts

Serving Size: 1 vegetarian capsule	
Servings Per Container: 60	
Amount Per Serving	%DV*
Probiotic Blend	30 Billion CFU †
<i>Bifidobacterium animalis subsp. lactis</i> HH-BA68	
<i>Bifidobacterium breve</i> HH-BR26	
<i>Limosilactobacillus fermentum</i> HH-LF392	
<i>Lactobacillus gasseri</i> HH-LG07	
<i>Lactocaseibacillus casei</i> PB-LC39	
<i>Lactobacillus helveticus</i> HH-LPH17	
<i>Lactocaseibacillus paracasei</i> HH-LP58	
<i>Lactocaseibacillus rhamnosus</i> PB-LR76	
*Daily Value(DV) not established	

Recommended Human Daily Intake

For a 70kg adult: 6.0×10^{10} CFU/day

Consumer Study

In the consumer study, 30 adults(PSQI global score ≥ 5) between the age 18 to 45 years were recruited to the study and asked to consume 2 capsules of the Mood Boosting Probiotics daily for 8 weeks and complete the Pittsburgh Sleep Quality Index. Lower scores indicate good sleep quality. The figure(Fig 2) below demonstrated that probiotics administration could improve sleep quality and reduce daytime dysfunctions.

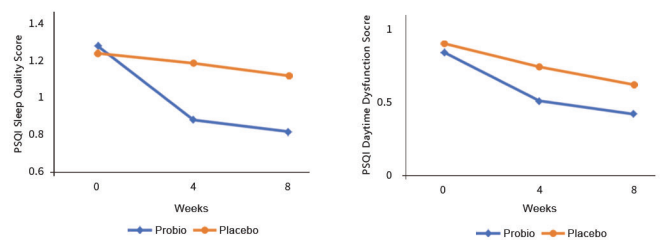


Fig 2. PSQI scores of tested adults

Product Quality

