

Target gb-X™

GUT-BRAIN AXIS

- 5 billion CFU probiotic blend clinically demonstrated to support positive mood[†]
- Powered by Ecologic BARRIER
- Protected by PROBIOACT® Technology



Target gb-X mechanisms of action¹

- Strengthening of the epithelial barrier as evidenced by in vivo transepithelial electrical resistance (TEER)
- Decrease in mast cell-mediated intestinal permeability demonstrated in vitro
- Inflammatory modulating IL-10 production demonstrated in vitro
- Enzymatic digestion of lipopolysaccharides demonstrated in vitro

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[†]These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

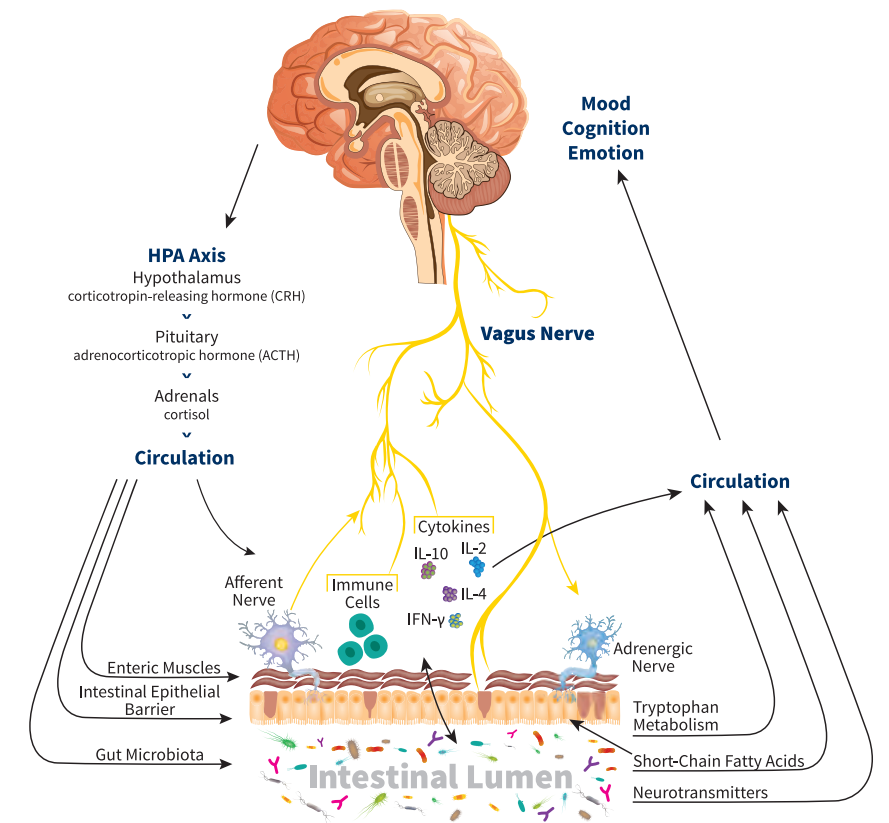
Introduction: the gut-brain axis

The gut-brain axis is a communication network that links the central nervous system (CNS) with the enteric nervous system. The anatomical network includes the brain and spinal cord, autonomic nervous system (ANS), hypothalamic-pituitary-adrenal (HPA) axis, and the innervation of the GI tract, or enteric nervous system.

Both neural and hormonal routes of communication allow the brain to influence intestinal activities, including activity of functional effector cells (i.e., immune cells, epithelial cells, enteric neurons, smooth muscle cells, interstitial cells, etc.). Gut microbiota also influence the CNS both directly and indirectly by supporting epithelial barrier function, modulating immune function, supporting healthy inflammation metabolism, and directly altering circulating neurotransmitter levels.

Product features

- **Powered by Ecologic BARRIER**
A 9-strain probiotic blend shown to support tight junction integrity, influence regulatory cytokine production, inhibit mast cell activation, and suppress circulating lipopolysaccharides (bacterial endotoxins).[†]
- **Protected by PROBIOACT® Technology**
A proprietary matrix designed to maximize shelf stability, minimize osmotic shock on rehydration, protect against gastric acid exposure, and enhance metabolic activity in the small intestine.[†]
- **Hypoallergenic, non-GMO, shelf stable, single-serving sachets**
Free of the following common allergens: milk/casein, eggs, fish, shellfish, tree nuts, peanuts, wheat, gluten, and soybeans. No artificial additives, colors, flavoring, preservatives, sugar, or salicylates are used. Contains corn.



Target gb-X research

Target gb-X strains were specifically selected for their pronounced synergistic influence on the gut-brain axis as demonstrated by both human and animal studies.

Clinical findings

Steenbergen and colleagues studied the effects of Ecologic BARRIER in a 2015 randomized, triple-blind, placebo-controlled trial (n=40, non-smoking healthy young adults, mean age 20 years) at a dose of 5 billion CFU per day. Consumption of Ecologic BARRIER significantly reduced overall cognitive reactivity to sad mood, in particular aggressive and ruminative thoughts, as assessed by the Leiden index (LEIDS-R).¹² Heightened cognitive reactivity to normal, transient changes in sad mood is an established marker of vulnerability to more serious mood alterations in otherwise healthy individuals, and is therefore considered an important target for interventions.

Animal studies

In a 2016 laboratory study, 40 male rats were randomized to either a control or high-fat diet for 10 weeks.³ After five weeks, the rats received either placebo or the Ecologic BARRIER probiotic blend. Forced swim test results demonstrated, independent of diet, Ecologic BARRIER significantly improved mood in the treatment group by 34%.¹³ In addition, the probiotic group had decreased levels of inflammatory cytokines and increased indole-3-propionic acid, a potential neuroprotective agent.

Conclusion

Target gb-X with Ecologic BARRIER is the first probiotic clinically shown to support healthy mood.[†] Supplied as convenient, single-serving, shelf stable sachets, Target gb-X is suitable for supporting the gut-brain axis through intestinal barrier integrity and healthy immune/inflammatory response.[†]

PURITY | POTENCY | PERFORMANCE

*One time 10% single order discount
¹ Van Hemert S, Ormel G. Influence of the multispecies probiotic Ecologic Barrier on parameters of intestinal barrier function. *Food and Nutrition Sciences*. 2014, 5, 1739-1745.
² Steenbergen L, et al. A randomized controlled trial to test the effect of multispecies probiotics on cognitive reactivity to sad mood. *Brain Behav Immun*. 2015 Aug;48:258-64.
³ Abildgaard A, et al. Probiotic treatment reduced depressive-like behavior in rats independently of diet. *Psychoneuroendocrinology*. 2017 May;79:40-48.
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