

# Target gb-X™

- 5 billion CFU probiotic blend clinically demonstrated to support healthy mood<sup>†</sup>
- Powered by Ecologic BARRIER | Protected by PROBIOACT® Technology

## 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).<sup>†</sup>
- **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.<sup>†</sup>
- **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).<sup>12</sup> 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.

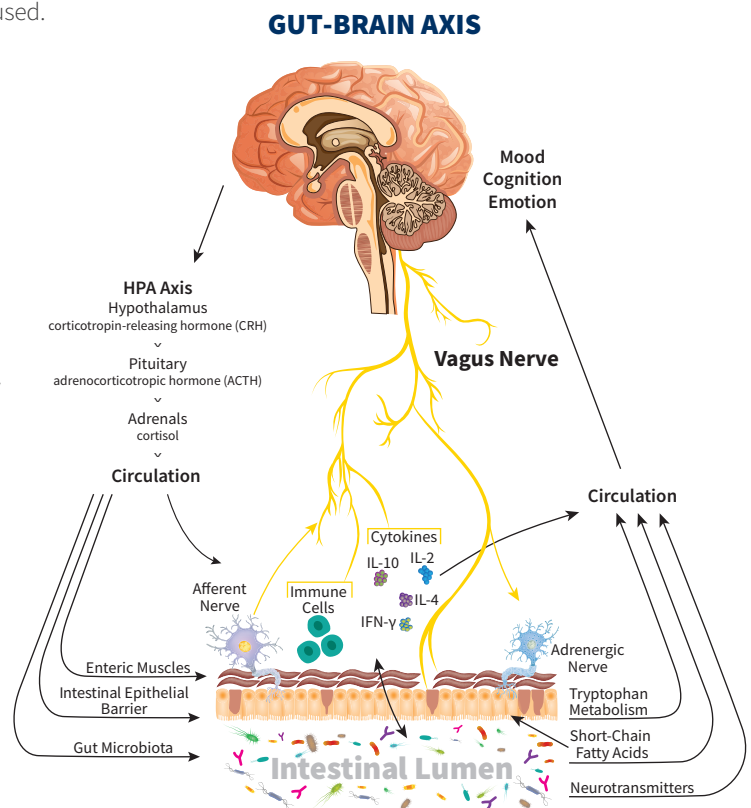
## Animal studies

In a 2016 laboratory study, 40 male rats were randomized to either a control or high-fat diet for 10 weeks.<sup>3</sup> After five weeks, the rats received either placebo or the Ecologic BARRIER probiotic blend.

<sup>†</sup>These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

### Target gb-X mechanisms of action<sup>1</sup>

- 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



Forced swim test results demonstrated, independent of diet, Ecologic BARRIER significantly improved mood in the treatment group by 34%.<sup>13</sup> 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.<sup>1</sup> 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.<sup>†</sup>

## Target gb-X Formulation

Function	<i>L. casei</i> W56	<i>L. acidophilus</i> W37	<i>L. brevis</i> W63	<i>Lc. lactis</i> W58	<i>B. lactis</i> W52	<i>Lc. lactis</i> W19	<i>L. salivarius</i> W24	<i>B. bifidum</i> W23	<i>B. lactis</i> W51
Epithelial barrier function strengthening <sup>†</sup>		X	X			X		X	
Cytokine modulation <sup>†</sup>	X			X	X			X	X
Mast cell integrity support <sup>†</sup>	X				X		X	X	X
Circulating lipopolysaccharide suppression <sup>†</sup>		X				X		X	

## Formula

**SUGGESTED USE:** Dissolve the contents of 1 sachet in approximately 3-4 oz. of lukewarm water or mix with a dairy product such as milk or yogurt. Gently stir before consuming. Take on an empty stomach in the morning, before bed, or as directed by a healthcare professional. Suitable for children from the age of 1 year. **Caution:** Do not exceed one sachet per day. When antibiotics are used, wait 2-3 hours before using this product. If you are pregnant, nursing, have a medical condition, or taking prescription drugs, consult your healthcare professional before using this product. Keep out of the reach of children.

Supplement Facts		
Serving Size 1 Sachet (Approx. 2 g) • Servings Per Container 30		
Amount Per Sachet	% Daily Value	
Calories	5	
Total Carbohydrate	2 g	<1%**
Sodium	70 mg	3%
Potassium (as potassium chloride)	35 mg	<1%
Ecologic BARRIER Probiotic Blend (5 billion CFU)	2 g	
<i>Lactobacillus casei</i> W56		*
<i>Lactobacillus acidophilus</i> W37		*
<i>Lactobacillus brevis</i> W63		*
<i>Lactococcus lactis</i> ssp. <i>lactis</i> W58		*
<i>Bifidobacterium animalis</i> ssp. <i>lactis</i> W52		*
<i>Lactococcus lactis</i> ssp. <i>lactis</i> W19		*
<i>Lactobacillus salivarius</i> W24		*
<i>Bifidobacterium bifidum</i> W23		*
<i>Bifidobacterium lactis</i> W51		*

\*Daily Value not established.  
\*\*Percent Daily Values are based on a 2,000 calories diet.

Other ingredients: Maize starch, maltodextrin, inulin, polydextrose, vegetable protein, magnesium sulfate, and manganese sulfate.

## GBX 30 sachets

## References

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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## How supplied

5 billion CFU, single-serving sachets (2 grams)

## Storage

Shelf stable. Store in a cool, dry place (59°F to 85°F) away from direct light.