

## Support for intestinal health while targeting the brain-gut connection\*

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IB Synergy™ is designed to target the enteric (intrinsic to the gut) nervous system, the nervous system that controls the GI tract.\* Considered to be the body's 'second brain,' it is made up of a self-contained, complex network of neurons, neurotransmitters, and proteins embedded in the lining of the GI system. It is responsible for all aspects of the digestive process, from the esophagus to the stomach and small and large intestines. It works to regulate normal digestive activity by controlling bowel motility and transmucosal fluid exchange (across mucosal membranes).<sup>1</sup>

This system, however, does much more than handle digestion. The connection between the brain and the gut is farreaching and is seen in many conditions including constipation, diarrhea, irritable bowel, ulcers, and anxiety, where symptoms manifest themselves at both the brain and gut levels. Think of this interconnection as a dual nervous system – those butterflies in your stomach before boarding an airplane, or that lump in your throat or a sudden loss of appetite upon hearing horrible news. It is also often seen in a wide variety of health conditions. The constipation that sufferers of Parkinson's or Alzheimer's often battle; the comorbidity seen between depression, fibromyalgia, post-traumatic stress disorder (PTSD), other psychiatric disorders and IBS.<sup>2</sup>

### Irritable Bowel Syndrome (IBS)

IBS is a prime example of this gut-brain connection. It is a condition that affects the large intestine and is characterized by changes in bowel movements (diarrhea and/or constipation), abdominal gas, pain and cramping, a feeling of fullness, and sometimes a loss of appetite. IBS is not to be confused with inflammatory bowel diseases such as Crohn's and colitis; in IBS the structure of the bowel remains normal, with no inflammation or changes in bowel tissue.

The causes of IBS are not clearly understood, although stress and certain foods often seem to be triggers. Hormones are also suspected. IBS is more prevalent in women, with the condition's symptoms worsening around their menstrual cycles.

The neurotransmitter serotonin also plays a role, as it is critical for digestion. Approximately 80-90% of the body's serotonin is located in the digestive tract where it acts on nerves in the gut and is involved in controlling the contractions of digestive muscles (motility) and in signaling nausea, pain, and other GI issues. It seems that those who suffer from IBS-D (diarrhea) have too much serotonin circulating in the gut, while those with IBS-C (constipation) have too little. When IBS sufferers vacillate between diarrhea and constipation it is believed to begin with excess serotonin. This excess overwhelms the serotonin receptors and shuts them down, triggering a serotonin imbalance that swings in the opposite direction and results in constipation.

### Highlights

***Perilla frutescens* (as Benegut®)**, also known as Chinese basil, is an herb native to Eastern Asia and is a member of the mint family. Benegut® is a special proprietary extract of *Perilla frutescens* obtained by water extraction of *Perilla frutescens* leaves. It demonstrates antispasmodic, prokinetic (stimulating GI motility) and anti-inflammatory effects, which help normalize and promote healthy bowel function and help with relief from GI symptoms. Benegut® is standardized to several flavonoids, including vicenin 2 (apigenin 6,8-di-C-glucoside), a recently discovered novel compound previously not described as a constituent of *Perilla* leaves.

### IB Synergy™ may benefit:\*

- Enteric nervous system (brain-gut connection): improving gut regularity, gut motility, bowel movement and stool frequency, GI pain and discomfort, symptoms related to digestive disorders
- Non-inflammatory GI conditions such as IBS-C (constipation dominant) and IBS-D (diarrhea dominant)
- Comorbidity of stress/depression associated with other health conditions such as fibromyalgia

## Supplement Facts

Serving Size 2 capsules

Servings Per Container 30

Amount Per Serving	% Daily Value
Active Dried Yeast (ibSium®) ( <i>Saccharomyces cerevisiae</i> )	500 mg *
L-Glutamine	500 mg *
Perilla Extract (Benegut®) ( <i>Perilla frutescens</i> )(leaf)	300 mg *
5-HTP (5-Hydroxytryptophan)	100 mg *

\*Daily Value not established.

**Other Ingredients:** Cellulose (capsule), microcrystalline cellulose, vegetable stearate.

- **Antispasmodic:** In an animal study on Perilla, including its key constituent vicenin 2, it has demonstrated the ability to help prevent intestinal smooth muscle spasms, which may lead to relief from GI symptoms.<sup>3</sup>
- **Prokinetic:** A prokinetic substance stimulates GI motility by increasing the frequency or strength of contractions in the small intestine without disrupting their normal rhythm. This characteristic proves to be beneficial for relieving unwanted GI symptoms such as those seen in IBS, including abdominal discomfort, bloating, and constipation.

According to a human study investigating Perilla's potential benefits on gut health, significant improvement was seen in GI symptoms such as bloating, gas, rumbling stomach, feeling of fullness and abdominal discomfort. Perilla appears to do this by inhibiting the enzyme acetylcholinesterase from breaking down the neurotransmitter acetylcholine, thereby increasing levels of acetylcholine. The resulting increase in acetylcholine levels helps to increase GI peristalsis, which stimulates motility.<sup>4</sup>

- **Anti-inflammatory:** Human ex vivo data indicate that the special extract of Perilla found in Benegut® demonstrated anti-inflammatory properties by direct suppression of the pro-inflammatory cytokine TNF-α.<sup>5</sup>

**Saccharomyces cerevisiae (as ibSium®)** is a well-tolerated species of probiotic yeast that has been shown to help improve gastrointestinal comfort and intestinal flora. Research shows that it demonstrates analgesic (pain-relieving) properties, helping to reduce digestive discomfort and abdominal pain in individuals with IBS.<sup>6</sup> *Saccharomyces cerevisiae* has been shown to help modulate pain perception through PPARα (Peroxisome Proliferator-Activated Receptors), which are a group of nuclear receptor proteins that have been shown to help with neuropathic and inflammatory pain.<sup>7</sup> *Saccharomyces cerevisiae* also exhibits anti-inflammatory properties. An in-vivo study on mice demonstrated its ability to induce production of anti-inflammatory cytokines (IL-10), while inhibiting the production of pro-inflammatory cytokines (IL-1β and TNF-α).<sup>8</sup>

**Glutamine** is a critical nutrient for the health of the digestive tract. It is one of the most commonly used amino acids in the body to repair tissues, particularly high turnover tissue such as the epithelial cells of the intestinal lining. Supplemental L-glutamine has been shown to have immunomodulatory, anticatabolic/anabolic and gastrointestinal mucosal-protective actions. Glutamine deficiency can cause severe intestinal degradation and supplementation can enhance intestinal healing and repair. It is essential in maintaining proper intestinal permeability. Increased intestinal permeability is a common problem found in various diseases that directly affect the gut, including IBS.<sup>9</sup>

**5-hydroxytryptophan (5-HTP)** is a precursor to serotonin, the 'feel good hormone,' and a dominant neurotransmitter in the enteric nervous system. Serotonin affects pain perception as well as sleep patterns, which is an important correlation because those who are chronically sleep-deprived tend to experience higher rates of depression and pain. Also, as previously mentioned, serotonin is important for proper digestion. Supplementing with 5-HTP has been associated with positive benefits on pain reduction, anxiety, and mood. Research shows that it helps decrease pain in conditions such as fibromyalgia.<sup>10</sup> (See the corresponding DFH technical sheet on 5-HTP for further information.)

## Suggested Lab Testing

- **Stool testing** – to rule out organic bowel disease and microbial issues (dysbiosis). Molecular DNA-based techniques are available and provide comprehensive evaluation of GI microbiota and markers of GI inflammation and absorption/digestive functionality (DFH GI-MAP™ from Diagnostic Solutions Labs).

### How to Use:

- Take two capsules per day, or as directed by your health care practitioner.
- IB Synergy™ is not recommended for pregnant or lactating women.

*For a list of references cited in this document, please visit:*

<https://www.designsforhealth.com/techsheet-references/ib-synergy-references.pdf>

**Benegut® is a registered trademark of Vital Solutions.  
ibSium® is a registered trademark of Lesaffre et Compagnie.**

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Healthcare practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities. Individual monitoring, including liver function tests, may be appropriate.

\*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.

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