

# GI-Resolve®

## Nutritional Support for Gastrointestinal Health

- Promotes optimal function of the GI lining
- Rejuvenates health of intestinal mucosa
- Supports healthy inflammatory response
- Builds immune support
- No added flavors, colors, sweeteners or gums
- Does not contain shellfish

The GI tract consist of a single contiguous layer of cells that separates the inside of the body from the external environment. The integrity of this living mucosal membrane, and the general health of the gut, is critical to overall health and well-being. Not only is its vitality necessary for the proper absorption of nutrients, the epithelial lining helps create a necessary barrier so environmental agents such as harmful toxins, allergens and microbes cannot cross the lumen of the bowel, causing inflammation. Dysfunction of the mucosal barrier may be associated with increased gut permeability and a number of gastrointestinal complications. Patients with compromised gut integrity may be prone to malabsorption of nutrients, a higher incidence of food sensitivities and other digestive issues.

**GI-Resolve®** combines effective clinical levels of well-researched nutrients and botanicals specifically formulated to support optimal gastrointestinal health and function *without any added flavors, colors, sweeteners, gums or common allergens*. Carefully sourced for premium quality, the ingredients in this clean and great-tasting powder include L-Glutamine, Zinc Carnosine, N-Acetyl Glucosamine, MSM, *Aloe vera* Leaf, Okra and DGL.

### L-Glutamine

**GI-Resolve®** contains 4 grams of the amino acid, glutamine, an important energy source for the gastrointestinal tract and precursor for growth to the intestinal lining cells. It helps maintain the integrity of the intestinal tract and enhances the protective mucosal lining. Glutamine is particularly important during times of stress, regulating intestinal barrier function in times of stress and other catabolic conditions. Furthermore, glutamine has been shown



**(800) 231-5777**

6801 Biotics Research Drive • Rosenberg, TX 77471  
biotics@bioticsresearch.com • www.bioticsresearch.com

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to stimulate the growth of the small intestinal mucosa and also enhances ion transport by the gut. A functional amino acid with multiple physiological roles, glutamine helps protect the gut from atrophy and impairment.<sup>(1)</sup>

Elderly patients are susceptible to damaged intestinal gut lining and, therefore, malnutrition due to malabsorption. In one study, subjects with signs of intestinal atrophy were given glutamine supplementation. When the intestinal villus height and crypt depth were measured, the difference between villus and crypt was significantly improved in those subjects receiving glutamine supplementation versus the control. Therefore, glutamine may increase intestinal mass thereby improving overall function.<sup>(2)</sup> In another study where oxidative damage to fish intestines was induced by lipid peroxidation, glutamine repaired the activity in the fish enterocytes and restored healthy glutathione production.<sup>(3)</sup>

In addition to its roles in promoting the growth of intestinal mucosa and repairing oxidative damage, oral supplementation with glutamine has also been found to positively alter the composition of the gut microbiota. A 2015 study showed the ratio *Firmucutes* to *Bacteroidetes* (a good biomarker for obesity) decreased in the group receiving glutamine.<sup>(4)</sup>

### **Zinc Carnosine**

**GI-Resolve**® features PepZinGI® zinc carnosine, a nutrient known for its mucosal-protective properties and its ability to support the body's restorative effect on gastrointestinal dysfunction, such as ulcers.<sup>(5)</sup> This trademarked ingredient has

a strong record of safety, efficacy and scientific merit. Capturing the synergy of L-carnosine and zinc, PepZinGI® is associated with antioxidant properties, membrane stabilization and tissue repair, and ushers in a new era of evidence-based dietary supplements for clinical gastroenterology. In addition to its mucosal-protective properties and restorative effects, zinc carnosine has been shown to activate the Nrf2 signaling pathway, supporting a healthy inflammatory response.<sup>(6)</sup> Heavy exercise may induce gut permeability, which then increases exposure to luminal toxins. One study showed that supplementation with zinc carnosine lessened the exercise-induced gut permeability, increased epithelial resistance and enhanced tight junction formation and stabilization.<sup>(7)</sup>

### **N-Acetyl Glucosamine (NAG)**

Glycosaminoglycans are normally attached to mucin and help form the protective barrier that separates bacteria from the intestinal epithelium. In certain digestive challenges, there is a widespread breakdown of glycosaminoglycans. N-actylglucosamine (NAG) is a naturally-occurring monosaccharide derivative of glucose and precursor for epithelial glycosaminoglycan synthesis. In one study, NAG was found to help improve signs of discomfort in patients with inflammatory bowel disease (IBD).<sup>(8)</sup> Additionally, NAG may support the growth of beneficial gut bacteria such as *Bifidobacterium bifidum*.

### **MSM**

Methylsulfonylmethane is an oxidized form of dimethyl sulfoxide, an organic sulfur compound

known for its support of healthy inflammation pathways and the healing of the gastric mucosa. *In vitro* studies indicate that MSM inhibits transcriptional activity of nuclear factor kappa-light-chain enhancer of activated B cells (NF-kappaB).<sup>(9,10)</sup> MSM's inhibitory effect on NF-kappaB results in the downregulation of mRNA for interleukin (IL)-1, IL-6, and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) *in vitro*.<sup>(11,12)</sup> Case studies of patients with joint impairment showed improvement in comfort and flexibility following supplementation with MSM.<sup>(13)</sup> Also, MSM increased levels of glutathione and reduced colonic inflammatory markers such as malondialdehyde (MDA), myeloperoxidase (MPO) and cytokine IL-1 $\beta$  in animals impaired with induced ulcerative colitis.<sup>(14)</sup> Oxidative stress in the gut may exacerbate conditions such as inflammatory bowel disease. MSM has been shown to provide strong antioxidant benefits.<sup>(15)</sup>

### Aloe vera Leaf

**GI-Resolve®** includes *Aloe vera* leaf extract to support a healthy intestinal lining. It was shown to reduce oxidative stress and support a healthy inflammatory response in rats with gastropathy.<sup>(16)</sup> Also, by inhibiting colonic myeloperoxidase (MPO) activity, which is a marker for inflammation, *Aloe vera* was shown to have both strong antioxidant properties and spasmolytic effects.<sup>(17)</sup>

### Okra

A mucilaginous herb, okra demonstrates potent antioxidant properties,<sup>(18)</sup> and was found to exhibit strong gastroprotective effects.<sup>(19)</sup>

### Deglycyrrhized Licorice (DGL)

With antioxidant potency, along with the ability to coat and soothe the intestinal lining, licorice has a long traditional use in gastrointestinal health. Its antioxidant activity results in cytoprotective mechanisms that supports the healing of tissues damaged by inflammation, providing comfort to patients.<sup>(20)</sup> A randomized double-blind, placebo-controlled clinical trial revealed a significant improvement in symptom scores compared to the placebo group in the support of esophageal and gastric health.<sup>(21)</sup> The licorice in **GI-Resolve®** has been processed to remove glycyrrhizin, which has been associated with sodium and water retention.

### Recommendation:

Two (2) teaspoons mixed with eight (8) ounces of cool water, or beverage of choice as a dietary supplement or as otherwise directed by a healthcare professional.

**GI-Resolve®** is available in a 6.7 ounce bottle (#6417)

<b>Supplement Facts</b>		
<b>Serving Size: 6.3 g (approx. 2 teaspoons)</b>		
<b>Servings Per Container: 30</b>		
	<b>Amount Per Serving</b>	<b>% Daily Value</b>
Zinc (from 50mg of PepZinGI® zinc carnosine)†	11 mg	73%
L-Glutamine	4 g	*
N-Acetyl D-Glucosamine	1 g	*
MSM (methylsulfonylmethane)	500 mg	*
Licorice (Glycyrrhiza glabra) (root) (extract) (deglycyrrhized)	400 mg	*
Okra (Abelmoschus esculentus) (fruit)	300 mg	*
Aloe Vera (Aloe barbadensis) (aerial part) (200:1 extract)	50 mg	*
<b>* Daily Value not established</b>		

† PepZinGI® is a registered trademark of Hamari Chemicals USA, Inc.

**This product is gluten dairy and shellfish free.**

**RECOMMENDATION:** Two (2) teaspoons each day as a dietary supplement or as otherwise directed by a healthcare professional.

**KEEP OUT OF REACH OF CHILDREN**

Store in a cool, dry area. Sealed with an imprinted safety seal for your protection.

Product # 6417 Rev. 07/18

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**(800) 231-5777**

6801 Biotics Research Drive • Rosenberg, TX 77471  
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