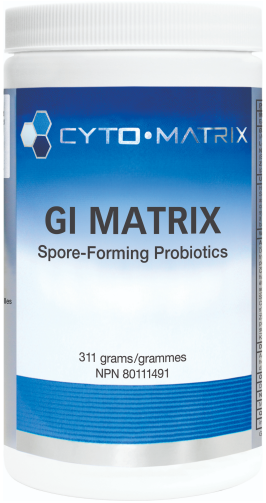
GI Matrix

An evidence-based blend of L-glutamine, N-acetylglucosamine, zinc carnosine and the spore-forming *Bacillus coagulans* designed to improve gut integrity and intestinal permeability. Unflavoured and lightly sweetened.



Gluten Free | Soy Free | Dairy Free

- Designed to decrease inflammation and intestinal permeability in the digestive tract
- L-glutamine acts as the primary fuel for the enterocytes and help to restore tight junctions in the digestive tract lining
- Zinc carnosine offers anti-*Helicobacter pylori* properties and gastroprotective capabilities
- N-acetylglucosamine is included for its ability to support the mucin layer of the intestinal tract
- *Bacillus coagulans*, a spore-forming bacterium is added for its ability to address IBS and functional abdominal pain in children as well as IBS and constipation in adults
- Gluten, soy and dairy-free

The digestive tract wall is selectively permeable. It allows the absorption of nutrients while simultaneously providing a protective barrier to the outside world. In cases of disease or inflammation, the gut may experience increased intestinal permeability. This is commonly known as leaky gut. Increased intestinal permeability has been linked to certain medications, food allergies, infections, various bowel diseases and irritable bowel syndrome. While removing environmental and external offending factors is integral for care, specific nutrients have been shown to help repair intercellular tight junctions and restore optimal permeability.

L-glutamine is one of the most well-known and crucial amino acids for human health. Not only is it necessary for glutathione production, it is also considered a primary fuel for macrophages and lymphocytes needed for proper immunity as well as enterocytes that line the digestive tract. L-glutamine appears to be most needed during times of convalescence, as muscle glutamine levels drop drastically due to significant stress. Case in point, improved digestive health has been observed as a result of glutamine supplementation under a variety of stressors. Reduced diarrhea and less digestive upset have been reported in supplemented individuals with digestive disorders, and those taking antiviral medications. These digestive benefits are thought to be as a result of its role in restoring tight junctions and reducing intestinal permeability.

Zinc Carnosine (ZnC), a combination of elemental zinc and the amino acids beta-alanine and histidine, is another nutrient with extensive research for its

gastroprotective capabilities. ZnC helps to restore glutathione levels in injured gastric mucosa and also to inhibit proinflammatory cytokine production. One study found that co-administration of ZnC with indomethacin decreased the subsequent gut permeability associated with NSAID use. Another study demonstrated that up to 72% of subjects with gastric tissue damage achieved remarkable improvement after 4-8 weeks of ZnC treatment. Lastly, ZnC has potent antimicrobial actions against *Helicobacter pylori* . For example, the addition of ZnC to "triple therapy", the traditional pharmaceutical treatment for H. pylori eradication, is more efficacious than when compared to triple therapy alone.

N-Acetylglucosamine (NAG) is important in supporting a specific portion of the intestinal tract lining known as the mucin layer. In a healthy GI tract, mucin acts as a barrier between the microbiome and the epithelial lining. However, this barrier is thinner or effectively breaks down in disease states and allows for bacterial penetration and inflammation. Glucosamine is necessary for rebuilding mucin and NAG has been shown to be preferentially incorporated into the intestinal mucin layer compared to other glucosamine sources such as glucosamine sulphate. Most importantly, NAG improves mucin thickness and clinical symptoms. Finally, in discussing the healing process of the digestive tract lining, one must mention probiotics. Spore-forming probiotics such as *Bacillus coagulans* are noted for their ability to survive even in the most harsh environments. In fact, spores of bacillus strains can survive in their dormant state for years through extreme temperature changes and pH alterations. The proper setting for spore germination and activation occurs in the small intestine where sugars, amino acids and purines are widely available. Once germinated and activated, *Bacillus coagulans* can promote digestion, increase nutrient absorption and reduce inflammation by producing a variety of enzymes and short-chain fatty acids. In addition, *Bacillus coagulans* provides a natural antimicrobial effect by competing for resources and preventing the growth of pathogenic bacteria. It does so by creating an anaerobic and acidic environment in the intestines, which makes it inhospitable for various pathogens and offers ideal conditions for beneficial bacteria to flourish, such as lactobacillus and bifidobacterium species

All in all, *Bacillus coagulans* helps to promote a favourable gut flora by improving the diversity, composition and metabolic function of the microbiota. Clinical studies have shown that the *Bacillus coagulans* strain is effective in the treatment of irritable bowel syndrome (IBS) and functional abdominal pain in children, as well as IBS and constipation in adults.

GI Matrix contains an evidence-based blend of L-glutamine, zinc carnosine, n-acetylglucosamine and *Bacillus coagulans*, collectively designed to decrease inflammation and intestinal permeability in the digestive tract. Each of these nutrients is delivered in clinically validated dosages to support bowel regularity, manage symptoms of irritable bowel syndrome and promote a favourable gut flora. GI Matrix is unflavoured, easily soluble and only slightly sweetened with monk fruit extract in order to improve compliance. 60 servings per container, providing a 30-day supply at its full daily dose.

Each scoop contains

Bacillus coagulans (ATCC PTA-11748)	1 billion CFU
L-glutamine	4.5g
N-acetylglucosamine (Shrimp, crab - exoskeleton)	500mg
Zinc L-carnosine (providing 8.5mg of zinc)	37.5mg

Non-Medicinal Ingredients

Maltodextrin, sugars (monk fruit extract).

Recommended Use Claim

Helps support digestive system health after periods of physical stress. Helps support immune system health after periods of physical stress. Source of Probiotic. Could promote a favourable flora. Helps to reduce the symptoms of Irritable Bowel Syndrome in adults with IBS such as, abdominal discomfort, pain intensity, bloating, sense of incomplete evacuation. Helps relieve symptoms associated with functional constipation.

Directions of Use

Adults (19 years and older) - Take 1 scoop, 2 times per day. Take at least 2-3 hours before or after antibiotics, other medications or natural health products.

Cautions and Warnings

Allergens: crustaceans. Do not use this product if • you have an immune-compromised condition (e.g. AIDS, lymphoma, patients undergoing long-term corticosteroid treatment). Consult a healthcare professional prior to use if • you are pregnant • you are breastfeeding • you have a fever • you are vomiting • you have bloody diarrhea • you have severe abdominal pain. Stop use and consult a healthcare professional if • symptoms of digestive upset (e.g. diarrhea) occur, worsen or persist beyond 3 days. Zinc supplementation can cause a copper deficiency. If you are unsure whether you are taking enough copper, consult a healthcare professional prior to use. Keep out of reach of children.

Storage Conditions

Do not use if safety seal is broken.