

Discussion

Ignition Aid is designed to support the gastric phase of digestion directly and provide stimulus for the excretion of pancreatic digestive juices in the small intestine. Adequate hydrochloric acid is fundamental to healthy protein digestion, nutrient availability, and the maintenance of normal gastric flora.^[1-3] There is a natural decline in the ability to produce hydrochloric acid, especially after the age of 60.^[1] There appears to be an even greater decline in pepsin production related to normal aging.^[4] Support of natural gastric secretions and acidity helps support normal digestion, absorption, and immune health.^[5] Maintaining an acidic pH in the stomach helps support normal gastric and intestinal flora as well.*[6-8]

L- Glutamic Acid This amino acid can be obtained from dietary protein or synthesized endogenously from other amino acids, such as glutamine. L- glutamic acid is used in Ignition Aid as an acidifying agent.*

Betaine Hydrochloride (HCI) Betaine (also known as trimethylglycine) is a natural substance found in foods such as beets, spinach, and grains. Research suggests that betaine supports cell health by acting as a methyl donor, and this, in turn, supports healthy methionine, homocysteine, and hepatic fat metabolism. Betaine also functions as an osmolyte, which supports the integrity of cells and proteins during fluctuations in hydration, salinity, and temperature. Betaine HCI, the acidic form of betaine, has traditionally been used to support digestion and absorption due to its ability to lower gastric pH.*[9,10]

Pepsin One of the first enzymes to initiate protein digestion, pepsin is first synthesized in the parietal cells of the gastric mucosa and secreted as the inactive zymogen precursor pepsinogen. Hydrochloric acid activates pepsinogen to convert it to pepsin once it is outside the cell. This activation sets up a chain reaction leading to the production of still more pepsin. Porcine pepsin, in addition to betaine HCI, is provided in Ignition Aid with the goal of promoting more endogenous pepsin production.*[4,6]

Gentian Root (Gentiana lutea) Used for centuries to support healthy digestion, gentian contains the bitter glycosides gentiopicrin and amarogentin. Gentian's bitter taste can be detected even at a dilution level of 50,000:1. Gentian root appears to support digestion by stimulating secretion of saliva in the mouth, hydrochloric acid in the stomach, and digestive juices from the pancreas. Due to the stimulant effect that gentian root has on endogenous production of HCI, individuals may be able to discontinue Ignition Aid after a period of use.*[11-14]

Ignition Aid is formulated with a variety of compounds and is designed to support gastric acidity, digestion, and normal gastrointestinal flora. Ignition Aid should be taken with, or immediately following a meal. Do not use if there is a prior history of, or a current complaint of, a peptic or duodenal ulcer.*

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Serving Size: 1 Capsule Servings Per Container: 180

unt Per Serving	%Daily Value
350 mg	* *
300 mg	* *
20 mg	* *
:) 20 mg	* *
	unt Per Serving 350 mg 300 mg 20 mg 2) 20 mg

** Daily Value not established.

Other Ingredients: Capsule (hypromellose and water), vegetable stearic acid, and silica.

Cautions

Do not use if there is a current complaint of a peptic or duodenal ulcer.

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Formulated To Exclude

Wheat, gluten, yeast, soy, dairy products, fish, shellfish, peanuts, tree nuts, egg, sesame, ingredients derived from genetically modified organisms (GMOs), artificial colors, and artificial sweeteners.

*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.

Directions

Take one capsule with or immediately following meals, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.



All Feed a Brain LLC Formulas Meet or Exceed cGMP Quality Standards

Discussion

Digestion Food must be broken down into its component parts in order to be absorbed into the bloodstream. Though salivary secretions, chewing, gastric acid, and pepsin begin the process of digestion, the majority of digestion takes place farther down the gastrointestinal tract in the small intestine. Once food leaves the stomach and enters the small intestine, digestive enzymes begin the monumental task of turning it into the building blocks and fuel that the body needs for structural support and metabolic processes. Digestive enzymes are produced primarily in the pancreas and brush border of the small intestine, and the health and function of these organs is vital to effective digestion and absorption. Proteolytic enzymes, amylases, and lipases are responsible for the digestion of proteins, carbohydrates, and fats. The complete digestion of these macronutrients produces small peptides, amino acids, monosaccharides and disaccharides, and free fatty acids that can easily pass through the intestinal microvilli and enter the bloodstream. Healthy digestion assures that incompletely digested molecules and proteins don't enter the bloodstream where they may be recognized as "foreign" by a vigilant immune system.*^(1,2)

Pancreatic and Intestinal Enzymes Pancreatic production of proteases, amylases, and lipases is complemented by intestinal production of lactase, maltase, sucrase, enterokinase, and various peptidases, highlighting the importance of the pancreas and the intestines in the digestive process. The enzyme lactase is required to break down lactose into glucose and galactose before the intact lactose can draw excess water into the bowel, and before colonic bacteria can break it down into volatile gases and acids. Though lactose (a disaccharide found only in mammals' milk) is readily digested by most infants, normal production decreases as a child is weaned onto whole foods and may eventually cease in adulthood. Exogenous administration of lactase can support lactose digestion effectively and allow for continued consumption of milk-based products.^[3,4] Maintaining a healthy gastrointestinal flora helps support brush border function and digestive capacity as well.^{*[5]}

Digestion of Plant-Based Compounds Blaze Digest contains several principle digestive enzymes as well as a complement of enzymes designed to break down plant compounds and fibers that humans would otherwise be unable to digest. Raffinose and melibiose, carbohydrates commonly found in legumes, can be broken down by the intestinal enzyme alpha-galactosidase. In the absence of this enzyme, these carbohydrates pass into the large intestine, where microbes can ferment them and produce volatile gases. Exogenous administration of alpha-galactosidase, present in Blaze Digest, supports the digestion of these plant-based compounds and has been used safely and effectively.^[6,7] Beta-glucanase, hemicellulase, pectinase, xylanase, and dipeptidyl peptidase (DPPIV) are also present and improve the digestibility of plant-based foods by breaking down plant cell walls, fibers, and proteins. Phytase is present to facilitate the breakdown of indigestible phytates from grains and seeds, and release phosphorus, calcium, inositol, and other nutrients for absorption. Bromelain and papain offer additional support for protein digestion. The enzyme invertase catalyzes sugar to glucose and fructose.*

Blaze Digest incorporates amylase, lipase, proteases, hemicellulase, bromelain, papain, lactase, DPPIV, and other key digestive enzymes to provide a comprehensive formulation that functions in a wide pH range to support and facilitate healthy digestion. It has been formulated to allow flexible dosing that can be adjusted for individual needs.*



Serving Size: 2 Capsules Servings Per Container: 60

ŀ	Mount Per Serving	%DV
Protease (pH 3.0-9.0)	120,000 HUT	**
Papain (from papaya)	50,000 TU	* *
Bromelain (from pineapple)	120 GDU	* *
Amylase	4,000 SKB	* *
Amyloglucosidase (glucoamylas	e) 30 AG	* *
Cellulase	4,000 CU	* *
Beta-Glucanase	50 BGU	* *
Alpha-Galactosidase	400 GAL	* *
Invertase	2,000 Sumner	**
Peptidase (29 DPPIV)	2,400 HUT	**
Pectinase	70 Endo PG	* *
Lactase	700 ALU	**
Phytase	20 U	**
Acid Stable Protease (pH 2.0-3.5	5) 400 HUT	* *
Lipase	1,200 FIP	* *
Xylanase	300 XU	**
Hemicellulase	200 HCU	* *

**Daily Value (DV) not established.

Other Ingredients: HPMC (capsule), microcrystalline cellulose, stearic acid, magnesium stearate, and silica.

Directions

Take one to two capsules daily, or use as directed by your healthcare practitioner. If necessary, capsules may be opened and contents sprinkled over food.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.

References

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Does Not Contain

Wheat, gluten, yeast, soy, animal or dairy products, fish, shellfish, peanuts, tree nuts, egg, ingredients derived from genetically modified organisms (GMOs), artificial colors, or artificial sweeteners.

Maltodextrin (derived from corn) is used to standardize enzyme activity.

Ember Boost



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Clinical Applications

- Supports a Healthy Balance of Microflora to Promote Digestive Health*
- Provides Immunoglobulins and Immunoregulating Factors to Promote Systemic Health*
- Enhances the Integrity of Intestinal Mucosa*



Ember Boost features clinically validated ingredients to support microbiome wellness and overall immune health. LactoSpore[®] (Bacillus coagulans MTCC5856) is a unique strain of shelf-stable L (+) lactic acid-producing bacteria with a naturally protective spore coating. In addition to its research-supported role in promoting healthy bacterial balance in the gut, this strain has been studied for its effects on maintaining blood lipid levels already within a healthy range and its effect on vaginal health. Ember Boost (IgY Max[™]), hyperimmunized egg powder, provides immunoglobulins and immune cofactors to support the body's natural defenses by limiting non-beneficial microbial adhesion.^{*}

All Feed a Brain LLC Formulas Meet or Exceed cGMP Quality Standards

Discussion

Diversity of gut microflora is characteristic of a healthy GI microbiome and contributes to overall health and vitality by promoting optimum digestion, assimilation, gut integrity, motility, and efficient removal of toxins and waste. Many internal and external influences, including stress, a poor diet, food sensitivities, medication, environmental factors, and certain disease conditions, can impact the microbial balance within this fine-tuned community. Their impact can allow for potential colonization by pathogenic organisms and disrupt a healthy balance, which can result in adverse effects ranging from GI symptoms to impaired immune response.^[1-3] Probiotics are part of the key to promoting the optimal balance of the microbiome,^[4] whether they originate from dietary sources or from supplements. Providing an increased supply of immunoglobulins also encourages a healthy balance of bacteria in the intestine. Due to the link between gut health and systemic health, supporting immunity through enhancement of a healthy GI microbiome balance promotes overall health.*

LactoSpore® (Bacillus coagulans MTCC5856)

Feed a Brain

Lactic acid-producing bacteria are suggested to play a role in GI microecology. They prevent the growth of non-beneficial microorganisms through competitive inhibition, generation of non-conducive acidic environments, and production of antibiotic-like substances.^[5] *B coagulans* is a unique lactic acid-producing probiotic strain featuring a thermostable spore coating that enables viability throughout shelf life and the ability to survive gastric secretions intact until reaching the gut.^[6] *B coagulans* has a well-documented safety profile.^[7] It received premarket safety approval in Canada in 2014 and has USFDA GRAS status. Furthermore, since its market introduction over 20 years ago, extensive research has suggested several beneficial physiological roles for LactoSpore*:

GI Health

Studies have suggested a role for *B coagulans* in improvement of both acute and chronic GI symptoms due to abnormalities in intestinal flora.^{*[8,9]} *B coagulans* is indicated for reducing discomfort of intestinal gas. In a study of adults (n=61) with post-prandial abdominal pain, distention, and flatulence but no GI diagnosis, improvement on a GI symptom rating scale was noted for 10 of 12 variables with significant improvement in three of 12 GI variables.^[10] Additional studies have shown efficacy in the management of GI problems associated with infections or the use of antibiotics.^{*[11,12]}

The effect of *B coagulans* on pain, discomfort, and bloating in patients (n=44) with irritable bowel syndrome (IBS) was evaluated over an eight-week period with statistically significant improvements noted from baseline value using a self-assessment score.^[13] Adding significance to the benefits for use in IBS, a double-blind, placebo-controlled, multicenter trial evaluating the safety and efficacy of LactoSpore in IBS patients (n=36) over a 90-day period suggested that daily supplementation with two billion spores significantly decreased symptoms of vomiting, bloating, diarrhea, abdominal pain, and stool frequency (P<0.01).^[14] This study ultimately resulted in licensure of a Canadian health claim for the use of LactoSpore to address IBS.*

Hyperlipidemia and Vaginal Health

While the evidence base supporting *B* coagulans is most notable for GI health, effects on maintaining blood lipid levels already within a healthy range have been demonstrated.^[15-17] In an open-label fixed-dose trial of 17 patients with hyperlipidemia, a daily regimen of *B* coagulans for 12 weeks suggested a significant reduction in total serum cholesterol and LDL cholesterol. The level of HDL cholesterol was marginally increased with no change in serum triglyceride concentrations noted.^[16] It has also been suggested that *B* coagulans plays a role in the beneficial management of non-specific vaginitis.^{*(16-20)}

IgY Max[™] Hyperimmunized Egg Powder

Microbial imbalance occurs when non-beneficial bacteria over-proliferate in the gut, taking up vital nutrients that beneficial flora need to survive.^[21] As an innovative approach to modifying the composition of the microbiome, *Ember Boost* combines LactoSpore with IgY Max to help promote the attachment of beneficial flora and address non-beneficial bacteria by imparting passive immunity in the intestinal tract, thus allowing the beneficial flora to thrive.*

Decades ago, immunology researchers began investigating the possible health benefits to humans that could be achieved by the consumption of products from hyperimmunized lactating cows and laying hens.^[22] Agricultural scientists soon discovered that they could simultaneously immunize a single laying hen against multiple human germs. The resulting avian immunoglobulins, known as IgY, are transferred to the egg yolk, paralleling the way human immunoglobulins (IgG) are passed to the placenta. From this discovery, a new functional food was born: the "hyperimmune egg." IgY Max is the result of special hyperimmune egg harvesting and processing techniques that result in a polyvalent, immunoglobulin-rich, dried hyperimmune egg food product that can be consumed as a dietary supplement. Hyperimmune egg provides a concentrated source of environmentally specific IgY antibodies and immune-supporting cofactors that can confer passive immunity to those who consume it.^[22,27] There are over 100 patents associated with the production of hyperimmune egg and its use in animals and humans. Additionally, IgY Max is self-affirmed GRAS—a designation that affirms safe consumption—and it holds a Food Additive Master File number.^{*[28]}

Continued on next page



Serving Size: 2 Capsules Servings Per Container: 60

	Amount Per Serving	%Daily Value
Calories	5	
Cholesterol	15 mg	5%
Sodium	5 mg	<1%
IgY Max [™] Hyperimmunized Egg Powder	1 g	**
LactoSpore® Bacillus coagulans MTCC5856	3 10 mg (1 Billion spores)	**

**Daily Value not established.

Other Ingredients: HPMC (capsule), medium-chain triglyceride oil, silica, dicalcium phosphate, and sweet potato maltodextrin Contains: Eag

IgY Max is a trademark of IgY Nutrition, LLC and is used under license.

LactoSpore® is a registered trademark of Sabinsa Corp.

Directions

Take two capsules twice daily with cold water, or as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner, and individuals with egg allergies should not consume this product. Do not use if tamper seal is damaged.

Does Not Contain

Wheat, gluten, yeast, corn, soy, dairy products, fish, shellfish, peanuts, tree nuts, ingredients derived from genetically modified organisms (GMOs), artificial colors, artificial sweeteners, or artificial preservatives.

Furthermore, in-vitro, animal, and human studies of hyperimmune egg and IgY have shown that supplemental IgY from hyperimmune egg imparts passive immunity in the intestinal tract.* $^{[22,23,27,29-32]}$

An eight-week open-label pilot study (n=6) utilizing two 500 mg capsules of IgY Max two times per day explored their effect on microbial diversity (through stool analyses) and biomarkers of gut wall integrity (zonulin, histamine, and diamine oxidase) in subjects with mild-to-moderate GI complaints. Subjective data included reports of "a decrease in gas and bloating" and "feeling more energy" suggesting improved quality-of-life measures. Objective markers showed a decrease in gut permeability and an overall increase in beneficial flora.*[33]

Randomized controlled trials have suggested that IgY plays a significant role in the management of rotavirus-associated diarrhea. In a study of children (n=150) with severe diarrhea who were randomly divided into control, probiotic, and immunoglobulin groups, subjects in the immunoglobulin group had a significantly increased fecal secretory immunoglobulin A (SIgA) level after one day of treatment, a significantly decreased frequency of diarrhea and fecal rotavirus shedding after three days of treatment, and a significantly shorter disease course (4.5±1.0 vs 5.8±1.7 days; P<0.05).These results suggested that although probiotics can reduce intestinal flora imbalance and prevent secondary intestinal bacterial infection, they take a longer time to relieve clinical symptoms and cannot shorten the course of disease.^[25] In an additional study, rotavirus-positive children (n=52) were randomized into IgY group and placebo IgY group, with all patients receiving standard supportive therapy for diarrhea. When compared to placebo, the IgY group had statistically significant reduction in oral and intravenous rehydration fluid intake, duration of diarrhea from day of admission, and duration of rotavirus clearance from stool from day of admission.*[27]

In addition to IgY immunoglobulins, hyperimmune egg also contains immunoregulatory factors that act directly on GI surfaces where they may influence effector cells and also circulate systemically where they act as intercellular communicators. As intercellular communicators, they are responsible for the regulation of a variety of immune, hormonal, and metabolic pathways that have widespread systemic effects.^[22] Preliminary studies suggest that these immunoregulatory factors benefit cytokine modulation, joint health, blood lipid metabolism, exercise performance, and overall wellness.*[22,26

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*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.

> Distributed By: Feed a Brain LLC 2407 S Congress Ave, Ste E #775 Austin, TX 78704

Glow Nourish



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Clinical Applications

- Gastrointestinal Support*
- Enhanced Production of Short Chain Fatty Acids*



Glow Nourish features four specialized ingredients for enhanced gastrointestinal support. This unique formula contains a concentrated extract of licorice that has been processed to remove glycyrrhizin—thus reducing risk of side effects associated with licorice. Glutamine serves as the predominant fuel and nitrogen source for the mucosal lining of the gastrointestinal (GI) tract. Arabinogalactan from the North American larch tree is a naturally occurring polysaccharide that provides excellent support for GI health. Research suggests that arabinogalactan plays a role in the promotion of gut microflora and may increase beneficial short-chain fatty acid production. The Aloe vera leaf extract in Glow Nourish has been processed to remove the bitter principles and prevent a laxative effect.*

All Feed a Brain LLC Formulas Meet or Exceed cGMP Quality Standards

Discussion

Feed a Brain

L-Glutamine, the most abundant free form amino acid in the body, is very important for maintaining gastrointestinal and stimulated immune cell functioning. It is an important transporter of nitrogen (and carbon) in the body and therefore, is vital in wound healing. Although glutamine can be synthesized by the intestinal mucosa, during periods of physiological stress when needs can not likely be met by the body alone, gut epithelial atrophy, ulceration and even necrosis are possible.^[1] L-glutamine is metabolized to ammonia and glutamate.*

Arabinogalactan, a polysaccharide derived from the Larch tree, contributes fermentable fiber to this formula in addition to having immuno-stimulatory properties. It minimizes ammonia synthesis and absorption, enhances production of short chain fatty acids and increases the gut microflora population.*^[2]

Licorice Root Extract 10:1(deglycyrrhized) is a concentrated extract that has been processed to remove glycyrrhizin, thus eliminating any risk of licorice-associated side effects. It is anti-inflammatory, antispasmotic and has laxative and soothing effects. Aspirin-induced mucosal damage has been shown to be reduced by administration of deglycyrrhized licorice.^{*[3]}

Aloe Leaf Extract (standardized to 50% polysaccharides), used for thousands of years, is perhaps most well-known for healing of damaged epithelial tissue, including the bowel lining. Despite the lack of scientific published studies there is anecdotal evidence to suggest that aloe vera helps inflammatory conditions of the gastrointestinal tract. In some individuals it may increase G.I. transit time, improve protein digestion and absorption, increase stool bulk and normalize stool bacteria where high levels of yeasts previously existed.^[4] The aloe extract used in Glow Nourish does not have a laxative effect because the bitter principles have been removed.*



Serving Size: 1 Scoop (about 5.8 g) Servings Per Container: About 30

Calories Total Carbohydrate Dietary Fiber	5 2 g	1%‡
Total Carbohydrate	2 g	1%
Dietary Fiber		170
Biotary i boi	1 g	4%
Sodium (naturally occuring)	5 mg	<1%
L-Glutamine	3 g	* *
Arabinogalactan (from Larix laricina)(heartwood)	2 g	* *
Deglycyrrhizinated Licorice 10:1 Aqueous Extract (Glycyrrhiza glabra)(root)	500 mg	* *
Aloe Vera 200:1 Aqueous Extract (Aloe barbadensis)(leaf gel)	100 mg	* *

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

Other Ingredients: Stevia leaf extract.

Directions

Mix one scoop in 2-4 oz water once daily, or as directed by your healthcare professional.

Consult your healthcare professional prior to use. Individuals taking medication should discuss potential interactions with their healthcare professional. Do not use if tamper seal is damaged.

Formulated To Exclude

Wheat, gluten, yeast, soy, animal and dairy products, fish, shellfish, peanuts, tree nuts, egg, sesame, ingredients derived from genetically modified organisms (GMOs), artificial colors, and artificial sweeteners.

References

1. L-Glutamine. www.naturaldatabase.com {accessed 4.3.07}

2. Arabinogalactan. www.naturaldatabase.com {accessed 4.3.07}

3. Rees WD, et al. Effect of deglycyrrhizinated liquorice on gastric mucosal damage by aspirin. *Scand J Gastroenterol.* 1979;14(5):605-7. [PMID: 493863]

4. Davis K, et. al. Randomised double-blind placebo-controlled trial of aloe vera for irritable bowel syndrome. *Int J Clin Pract.* 2006 Sep;60(9):1080-6 [PMID: 16749917]