



Enzyme Support

CLINICAL APPLICATIONS

- Supports Healthy Digestion and Maximizes Nutrient Absorption
- Targeted Enzyme Support for Food Sensitivities
- Designed to Enhance the Benefits of a Plant-Rich Diet
- Stimulates the Release and Production of Natural Digestive Enzymes in the Pancreas
- Supports Gastric Acid Balance and Digestive Function



This product is a comprehensive blend of acid-resistant, plant-based enzymes designed to help maximize the digestion and absorption of nutrients from food. Each capsule includes lipase, amylase, lactase, CereCalase and protease to aid in the digestion of protein, fat, starches, fiber and other difficult to digest foods known to cause food sensitivities. CereCalase, a special blend of hemicellulase, beta-glucanase and phytase, is specially formulated to digest the cell walls of plants, providing better nutrition from a plant-based diet. This product also contains Gentian root, a traditional bitter herb as well as artichoke, a natural choleric, added to stimulate the body's natural production of enzymes and bile.

Overview

Because of our hectic lifestyle, and the way we often consume food that is frequently overcooked, digestion can often be less than optimal. Poor digestion can produce bloating and gas, cramping, diarrhea or constipation, and even lead to incomplete digestion of food proteins that have been linked to food allergies. Conversely, more thorough digestion of foodstuffs with enzymes prevents foods from being fermented

in the gut and the proliferation of "bad" bacteria and yeast at the expense of "good" intestinal bacteria. More complete digestion of carbohydrates removes the food source for these bad organisms. Another benefit of enzymes is that more nutrition can be derived from food. In addition, regular bowel movements result from this better digestion. This product is specifically designed to support digestion and help unlock more nutrition from food.

Enzyme Depletion[†]

Research has shown that the widespread chronic use of proton pump inhibitor medications contributes to side effects stemming from low acid production, including poor mineral absorption and poor absorption of B12 which have been linked with a multitude of health problems.¹ In addition, an estimated 30% of Americans suffer from low levels of acidity. The depletion of stomach acidity due to medications and age, are further compounded by the age-related decline of enzyme production which both influence the breakdown of foods into absorbable nutrients.² This can lead to suboptimal nutritional status of certain vitamins and minerals and insufficient enzyme activation in the stomach.

Enzyme

Amylase
 Protease 3.0, 4.5 and 6.0, Neutral Protease
 Peptidase
 Lactase
 Glucoamylase
 CereCalase
 Alpha-Galactosidase
 Pectinase
 Cellulase
 Xylanase
 Acid Maltase
 Bromelain
 Lipase

Breaks down

Starches such as potatoes, rice and bread
 Proteins, such as meats and eggs
 Proteins, such as meats and eggs
 Lactose (milk sugar)
 Starches such as potatoes, rice and bread
 Vegetables/plant cell walls
 Oligosaccharides/raffinose in legumes and cruciferous vegetables
 Pectin, a fiber found in fruits and vegetables
 Cellulose, a fiber found in fruits and vegetables
 Hemicellulose, a fiber found in plant cell walls
 Glycogen, the storage form of glucose
 Proteins, such as meats and eggs
 Fats



Enzyme Blend†

Digestive enzymes have a long history of use for those who need digestive enzyme support.^{3,4} In the past, animal enzymes were preferred to vegetable enzymes for their protein digesting strength though they required a narrower pH window of 6.5-7.5 in order to be activated. This product utilizes new, plant-based enzymes which function within a broader pH range of 2.5-8.5, and still offer the digestive strength of animal-based enzymes. This broad pH window of activity makes it especially helpful for individuals with lower gastric acid levels or inconsistent pH's. Each enzyme has been tested in pH, temperature, and gastric survivability studies to ensure enzyme activity. In addition, this product also includes DPP4, one of the primary components of peptidase, which has been shown to digest and neutralize gluten. This action may help to support gluten-sensitive individuals who ingest it inadvertently. The blend of proteases in this product is also effective in breaking down proteins from soy, whey, and casein from milk products. Lipases for fat breakdown as well as amylases for carbohydrate breakdown are also included for full spectrum digestive support.

Sustaining a Plant-Rich Diet†

This product offers additional support for those who have difficulty digesting plant-based foods. Optimal breakdown of plant cell walls is complex and nutrients contained within the cell walls can be difficult to absorb. For this reason, CereCalase, pectinase, xylanase, cellulose, glucoamylase and alpha-galactosidase, plant enzymes not produced in the body, are added to the formula. The addition of CereCalase assists in the breakdown of plant cell walls and helps to release trapped nutrients from plant materials. Alpha-galactosidase is also included for difficult-to-digest foods such as beans, legumes and cruciferous vegetables, so as to help people maintain a plant-rich diet. Both animal and human trials indicate that the supplementation of phytase helps release these nutrients and improve the nutrition of the consumer.^{5,6,7} Furthermore, a large portion of the fibrous components of botanicals are composed of non-starchy polysaccharides (NSPs), the primary ones being hemicelluloses and beta-glucans. These two compounds can alter the transit times of foods, bind digestive enzymes and trap essential plant constituents. Enzymes which degrade these components have been shown to improve the digestibility and nutrient profiles of plant foods and products.^{8,9,10} Gentian and artichoke are also added to help stimulate the body's own digestive processes for optimal digestive capacity.

Gentian and Artichoke†

Herbalists have used bitters, including gentian, to stimulate natural digestive enzymes in the mouth and stomach for hundreds of years. Studies have shown that artichoke, categorized as a choleric, stimulates the body's natural production of bile, which is responsible for emulsifying fats in our diets. Artichoke also increases the surface area of fats, which allows enzymes to more efficiently break them down. Artichoke and gentian root provide an excellent vegetarian alternative to ox bile, which is traditionally used in digestive supplements to support bile production.

Directions

1 capsule 15 minutes before a meal or as recommended by your health care professional.

Does Not Contain

Gluten, yeast, artificial colors and flavors.

Cautions

If you are pregnant or nursing, consult your physician before taking this product.

Supplement Facts^{v3}

Serving Size 1 Capsule
Servings Per Container 90 & 180

1 capsule contains	Amount Per Serving	% Daily Value
Enzyme Blend	235 mg	
Providing:		
Amylase	7,650 DU	*
Protease 4.5	20,400 HUT	*
Protease 6.0	2,550 HUT	*
Protease 3.0	10 SAPU	*
Neutral Protease	3,825 PC	*
Acid Maltase	10.7 MaltU	*
Bromelain (equivalent to 25.5 GDU) (from Pineapple)	382,500 FCC PU	*
Papain	357,000 USP Units	*
Glucoamylase	12.75 AGU	*
Peptidase	2,550 HUT	*
Lactase	816 ALU	*
Alpha-galactosidase	102 GalU	*
Lipase	1,070 FIP	*
Pectinase	7.65 endo-PGU*	
Invertase	433 SU	*
Cellulase	178 CU	*
Xylanase	255 XU	*
CereCalase® (Hemicellulase, Beta-Glucanase, and Phytase)	150 MU	*
Artichoke Leaf Extract (Standardized to contain 5% Cynarin)	150 mg	*
Gentian Root Extract 4:1	100 mg	*

* Daily Value not established



References

1. <http://www.health.harvard.edu/fhg/updates/do-ppis-have-long-term-side-effects.shtml>
2. Greenberg RE, Holt PR. Influence of aging upon pancreatic digestive enzymes. *Dig Dis Sci*. 1986 Sep;31(9):970-7.
3. Halgreen H, Pedersen NT, Worning H. Symptomatic effect of pancreatic enzyme therapy in patients with chronic pancreatitis. *Scand J Gastroenterol*. 1986 Jan;21(1):104-8.
4. Scolapio JS, Malhi-Chowla N, Ukleja A. Nutrition supplementation in patients with acute and chronic pancreatitis. *Gastroenterol Clin North Am*. 1999 Sep;28(3):695-707. Review.
5. Sandberg, AS et al. "Dietary *Aspergillus niger* Phytase Increases Iron Absorption In Humans." *J Nutr*. 1996. 126: 476.
6. Ravindran, V et al. "Effects Of Phytase Supplementation, Individually and In Combination, With Glycanase On The Nutritive Value Of Wheat And Barley." *Poult Sci*. 1999. 78:1588-95.
7. Nasi, M et al. "Comparison Of *Aspergillus Niger* Phytase And *Trichoderma Reesei* Phytase And Acid Phosphatase On Phytate Phosphorus Availability In Pigs Fed On Maize-Soybean Meal Or Barley-Soybean Meal Diets." *Arch Tierernahr*. 1999. 52(1):15-27.
8. Graham, H et al. "Effect Of Pelleting And Beta-Glucanase Supplementation On The Ileal And Fecal Digestibility Of A Barley-Based Diet In The Pig." *J Anim. Sci*. 1989.67:1293-1298.
9. Almirall, M.; Francesch, M.; Perez,-Vendrell, A.M.; Brufau, J.; Esteve-Garcia, E. "The Differences In Intestinal Viscosity Produced By Barley And Beta-Glucanase Alter Digesta Enzyme Activities And Ileal Nutrient Digestibilities More In Broiler Chicks Than In Cocks." *J Nutr*.1995. 125(4): 947-55.
10. Cowan, W.D. *Animal Feed in Industrial Enzymology*, 2nd edition (New York: Stockton Press, 1996).

