

Digestive Enzymes delivers the synergistic action of nutrient-specific enzymes which enhance the breakdown, digestion, and intestinal absorption of proteins, carbs, and fats present in all foods. Here's a closer look at the potency-validated ingredients which can impact your health and quality of life.

Pancreatin: Each capsule delivers the synergistic action of 200 mg of $4 \times$ concentrate of three specific pancreatic enzymes.

Protease is a proteolytic enzyme responsible for the breakdown of stubborn proteins into biologically active peptides and amino acids.

Amylase is an enzyme critical for carbohydrate digestion

Lipase is a pivotal enzyme for the digestion of dietary fats of plant and animal origin.

Betaine Hydrochloride: Commonly referenced as betaine HCl, it supports the production of stomach acid which, following saliva, is responsible for initiation of the digestive journey.

Ox Bile: This bovine-sourced compound aids in the digestion and absorption of dietary fats, supporting overall digestive health.

Pepsin: A biologically active enzyme which supports the breakdown of complex proteins to amino acids, the building blocks of muscle and connective tissue.

Papain: Naturally sourced from papaya, papain contributes to protein digestion and assimilation.

Flip Over for a Purely Plant-Based Alternative

Make Life Better

Digestive Enzymes

Other ingredients: Microcrystalline cellulose, vegetable magnesium stearate, and silicon dioxide in a non-GMO vegetable capsule composed of carbohydrate gum and purified water.

Directions of use: Adults: Take 1–4 capsules daily with food or as directed by your health-care practitioner. Take with or immediately before a meal/food. Swallow whole; do not crush or chew. Use the smallest effective dose which controls symptoms.

Duration of use: Consult a health-care practitioner for use beyond 4 weeks. #3439 - 60 capsules • #0224 · 100 capsules

V0284-R4 · NPN 80090702

Manufactured under strict GMP (Good Manufacturing Practices).

Plant Digestive Enzymes

 Each vegetable capsule contains:

 Protease – Providing the following:

 Protease I.
 41,437 FCC HUT

 Protease II.
 7380 FCC HUT

 Protease III.
 57 FCC SAP

 Amylase (all carbohydrates)
 11,812 FCC DU

 Bromelain (from pineapple [Ananas comosus
 11,812 FCC DU

Bromeiain (from pineappie (Ananas comosus	
var. comosus] stem) (proteins)	720,000 FCC PU (20 mg)
Cellulase (all fibres)	1260 FCC CU
Dipeptidyl-peptidase IV (gluten)	2050 FCC HUT
alpha-Galactosidase (beans and legumes)	19 FCC GalU
Glucoamylase (starch)	50 FCC AGU
Hemicellulase (plant fibres)	33.3 FCC HCU
Invertase (sugar)	80 FCC INVU
Lactase (milk sugar)	544 FCC ALU
Lipase (all fats and oils)	3000 FCC LU
Maltase (all grains)	130 FCC DP
Papain (from papaya [Carica papaya] fruit) (all proteins)	300,000 FCC PU
Pectinase (pectins)	60 endo-PGU
Phytase (phosphorus)	2.5 FCC FTU

Other ingredients: Microcrystalline cellulose, vegetable magnesium stearate, and silicon dioxide in a non-GMO vegetable capsule composed of vegetable carbohydrate gum and purified water.

Directions of use: Adults: Take 1 capsule three times daily with a meal or as directed by your health-care practitioner.

Duration of use: Consult a health-care practitioner for prolonged use. #1309 · 30 capsules • #1310 · 60 capsules • #1311 · 120 capsules V0361-R5 · NPN 80073581 Manufactured under strict GMP (Good Manufacturing Practices).

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Digestive Enzymes

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All New Roots Herbal Products Are Tested in Our ISO 17025–Accredited Laboratory

Digestive Enzymes



The Importance of Enzymes

Enzymes are critical for energy conversion of food. Unfortunately, when foods are cooked and processed, naturally occurring enzymes are either destroyed or depleted drastically. When the food you eat does not contribute some of the enzymes needed for its own digestion, your body has to contribute more than its share, diverting enzymes from other necessary functions.

Our food has less nutrient value to begin with, and we all experience some degree of an age-related reduction in enzyme production. This brings the question: Are we really getting the full value from the food we invest in?

Do you...

- Suffer frequently from bloating, gas, and indigestion?
- Have a pancreatic insufficiency?
- · Lack energy even when you eat well?
- Have a digestive enzyme deficiency?

Could You Benefit from Supplementation?

Incorporating digestive enzymes into your dietary routine does not simply address a digestive condition such as acid reflux, indigestion, or irregularity: It supports the entire journey of the food we eat. Compounds such as betaine hydrochloride bolster stomach acid to create chyme, the pulp-like acidic mass of partially digested food which enters the small intestine. This in turn promotes the synergistic action of enzymes produced within the pancreas, liver, and small intestine which drive digestion and nutrient assimilation. Supplementation from either plant or animal sources can address an insufficiency of these digestive enzymes.





Plant Digestive Enzymes: Sourced Exclusively from Potent Botanical Sources

Protease, as the name suggests, breaks down proteins. Without proper protein digestion, a whole host of health problems from food allergies, to leaky gut syndrome, to toxicity and even skin diseases like psoriasis, become possible.

Papain, derived from papaya, is a proteolytic enzyme which digests inert (non-living) proteins.

Amylase breaks down carbohydrates. It is present in human saliva, where it begins the chemical process of digestion. The pancreas also makes amylase to break down stored glycogen into glucose, to supply the body with energy.

Lactase is the enzyme required to break down lactose, the primary sugar in milk. Many people suffer from lactose intolerance, as their lactase-producing gene is turned off and the lactase itself was only provided through their mother's milk.

Lipase is responsible for digesting fats. Without lipase, we would not only poorly absorb fats, but also the fat-soluble vitamins, like vitamins A, D, E and K, and all the carotenes.

Cellulase breaks down fibre and is found only in plants and plant enzymes: it is absent from both the pancreatic enzymes produced by your body and from the pancreatic enzymes found in animal source digestive enzymes. *alpha*-Galactosidase breaks down oligosaccharide linkages, which humans cannot digest. It allows humans to absorb single-component sugar residues.

Maltase hydrolyses maltose into two molecules of glucose. It is present in the brush border of the intestinal mucosal cells. Maltase breaks down carbohydrates, malt, grains, and simple sugars.

Invertase breaks down carbohydrates, especially sucrose.

Pectinase breaks down carbohydrates, such as pectin found in many fruits and vegetables.

Glucoamylase breaks down carbohydrates, specifically polysaccharides into glucose.

Hemicellulase is a mixture of enzymes which can hydrolyze the indigestible components of plant fibres.

The mechanism of **phytase** starts when it catalyzes the hydrolysis of phytic acid found in the leaves of plants and arranges them into component parts. Since humans lack endogenous phytase, supplementing can release important mineral nutrients that would otherwise be lost in digestion. Scientific evidence suggests that enzymes, such as phytase, can be useful supplements for digestive support and general nutritional support.

The protein-digesting enzymes found in **bromelain** promote and maintain proper digestion.

Sources

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- Domínguez-Muñoz, J.E., U. Birckelbach, B. Glasbrenner, T. Sauerbruch, and P. Malfertheiner. "Effect of oral pancreatic enzyme administration on digestive function in healthy subjects: comparison between two enzyme preparations." Alimentary Pharmacology & Therapeutics, Vol. 11, No. 2 (1997): 403–408.
- Friess, H., J. Kleeff, P. Malfertheiner, M.W. Müller, K. Homuth, and M.W. Büchler. "Influence of high-dose pancreatic enzyme treatment on pancreatic function in healthy volunteers." International Journal of Pancreatology, Vol. 23, No. 2 (1998): 115–123.