# XymoZyme®


Available in 60 vegetarian capsules

- **XymoZyme** is a cost-effective, non-prescription, broad-spectrum digestive enzyme formula suitable for vegans and designed to support the digestion of fats, carbohydrates, fiber and lactose

## 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** XymoZyme 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 XymoZyme, 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.*

XymoZyme 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.*

## XymoZyme®

**Medicinal Ingredients (per two vegetarian capsules)**

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| Protease (pH 3.0-9.0) (from *Bacillus subtilis* and *Aspergillus oryzae*) | 120,000 FCC HUT |
| Papain (from *Carica papaya*) | 3,000,000 FCC PU |
| Bromelain (from *Ananas comosus*) | 1,320,000 FCC PU |
| Alpha-Amylase (from *Aspergillus oryzae*) | 4,000 FCC DU |
| Glucoamylase (from *Aspergillus niger*) | 30 FCC AGU |
| Cellulase (from *Trichoderma longibrachiatum*) | 4,000 FCC CU |
| Beta-Glucanase (from *Trichoderma longibrachiatum*) | 50 FCC BGU |
| Alpha-Galactosidase (from *Aspergillus niger*) | 400 FCC GALU |
| Invertase (from *Saccharomyces cerevisiae*) | 2,000 FCC SU |
| Protease (from *Aspergillus oryzae*) | 2,400 FCC HUT |
| Pectinase (from *Aspergillus niger*) | 70 FCC Endo PGU |
| Lactase (from *Aspergillus oryzae*) | 700 FCC ALU |
| Phytase (from *Aspergillus niger*) | 20 FCC FTU |
| Acid Protease (pH 2.0-3.5)(from *Aspergillus niger*) | 400 FCC HUT |
| Lipase (from *Candida cylindracea*) | 3000 FCC LU |
| Xylanase (from *Trichoderma longibrachiatum*) | 300 FCC XU |
| Hemicellulase (from *Aspergillus niger*) | 200 FCC HCU |

**Non-Medicinal Ingredients**
Hypromellose, microcrystalline cellulose, stearic acid, magnesium stearate, silicon dioxide.

**Recommended Dose**
*Adults:* Take one to two capsules daily immediately before or with a meal or use as directed by your healthcare practitioner. If necessary, capsules may be opened and sprinkled over food. For prolonged use, consult a healthcare practitioner.

**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.

VEGETARIAN CAPS

## References


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**Additional references available upon request**

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