



GENESTRA
BRANDS®

V-Enzymes Chewable



Great-tasting, vegan-friendly digestive aid formula[‡]

- Features a combination of five digestive enzymes: amylase, protease, lactase, cellulase and lipase
- Supports digestion of complex carbohydrates, proteins, cellulose, lactose and fat[‡]
- Aids in reducing muscle soreness and tenderness following eccentric exercise[‡]
- Delicious natural peppermint-flavored chewable tablets

V-Enzymes Chewable supports nutrient digestion, abdominal comfort and muscle recovery with a combination of five vegan-friendly enzymes. Each great-tasting chewable tablet provides fungal amylase, protease, lactase, cellulase and lipase to help break down complex carbohydrates, proteins, lactose, cellulose and lipids, respectively. Adequate production and activity of digestive enzymes is critical for proper nutrient digestion and absorption, including the absorption of fat-soluble vitamins. V-Enzymes Chewable contains microbial-derived enzymes that act like those normally found in the body, aiding the digestion of nutrients. This formula also contains the same enzyme combination clinically demonstrated to significantly improve muscle soreness and tenderness following eccentric exercise. Additional research suggests that microbial enzymes, such as those derived from *Aspergillus oryzae*, are stable and active across a wide pH range, allowing them to function throughout the entire digestive tract. Ideal for vegetarians and vegans, V-Enzymes Chewable is an easy and delicious way to promote overall digestive function and comfort.[‡]

SUPPLEMENT FACTS

Serving Size 1 Tablet
Servings per Container 100

	AMOUNT PER SERVING	% DV
DigeZyme® Multienzyme Complex	50 mg	*
Providing		
Alpha-Amylase (from <i>Aspergillus flavus</i> var. <i>oryzae</i>)	1200 FCC DU	*
Bacterial Protease (from <i>Bacillus subtilis</i>)	300 FCC PC	*
Lactase (from <i>Aspergillus flavus</i> var. <i>oryzae</i>)	200 FCC ALU	*
Cellulase (from <i>Trichoderma longibrachiatum</i>)	55 FCC CU	*
Lipase (from <i>Rhizopus oryzae</i>)	10 FCC LU	*

* Daily value (DV) not established

Other ingredients: Xylitol, mannitol, maltodextrin, hyprolose, natural peppermint flavor, ascorbyl palmitate



DigeZyme® is a registered trademark of Sabinsa Corporation.

Recommended Dose

Chew 1 tablet 1-3 times daily with meals or as recommended by your health professional.

Size
100 Chewable Tablets

Product Code
10571-100U



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V-Enzymes Chewable

Scientific Rationale:

V-Enzymes Chewable supports digestive function with a combination of fungal protease, lipase, amylase, lactase and cellulase. These exogenous enzymes act like the digestive enzymes normally found in the body, offering support for digestion in the intestines.¹ While many enzyme preparations include enzymes derived from porcine pancreas, this formula offers microbial enzymes derived from fungi such as *Aspergillus oryzae* and *Rhizopus oryzae*. As such, it is ideal for vegetarians, vegans, and those with allergies or other dietary restrictions. Additionally, as microbial enzymes reportedly remain stable and active over a wide pH range, they can function across the entire digestive tract.^{2,3†}

Protein digestion begins in the stomach, as pepsin and stomach acid break down and denature polypeptides.⁴ In the small intestine, protein digestion continues with trypsin and chymotrypsin, two key **proteases** produced by the pancreas.⁴ These enzymes hydrolyze polypeptides into amino acids and oligopeptides, which may be further metabolized into amino acids, dipeptides and tripeptides by brush border enzymes.⁴ The amino acids, dipeptides and tripeptides produced are then absorbed by the intestinal epithelial cells.^{4†}

The digestion of lipids begins in the mouth with lingual **lipase**, and continues in the stomach with the addition of gastric lipase.⁴ However, pancreatic lipases are responsible for a majority of lipid hydrolysis in the digestive system, helping to convert triglycerides into fatty acids and monoglycerides.^{4,5} Once these breakdown products enter the intestinal epithelial cells, they are resynthesized into triglycerides and packaged alongside proteins, phospholipids and cholesterol into chylomicrons.⁴ Newly formed chylomicrons exit the epithelial cell, pass through lymphatic vessels and eventually enter the bloodstream via the thoracic duct.^{4†}

Starch digestion begins in the mouth with salivary **amylase**, although the majority is hydrolyzed in the small intestine with pancreatic amylase.⁴ Pancreatic amylase helps break down starch into disaccharides and trisaccharides, such as maltose and maltotriose.⁴ These breakdown products are further hydrolyzed into monosaccharides (such as glucose) by brush border enzymes before absorption by the intestinal epithelium.^{4,5†}

The digestion of lactose, a sugar present in dairy products, results from the actions of **lactase**.² This enzyme is responsible for converting lactose into glucose and galactose at the brush border of the small intestine.⁴ However, improper lactose digestion is one of the most common enzyme deficiencies worldwide, primarily affecting individuals of African, Asian, Native American and Hispanic heritage.² Insufficient lactase activity results in lactose reaching the colon intact, where it is fermented by colonic bacteria and leads to changes in the osmotic gradient; in turn, this results in bloating, cramping, flatulence and diarrhea.^{2,4} Lactase intake from a variety of sources, such as *Aspergillus oryzae*, has been shown to support lactose digestion, including in individuals with low lactase activity.^{2†}

Humans do not naturally produce **cellulase**, the enzyme that breaks down cellulose.⁶ This indigestible polysaccharide, which provides strength to plant cell walls, is present in plant fibers such as fruits, vegetables, sprouts, herbs, legumes, cereals and nuts.⁶ Cellulase supplementation may help aid the digestion of these foods by hydrolyzing cellulose into smaller units, such as glucose, which can then be absorbed by the body.^{6†}

Enzyme production may decrease naturally with age; high intake of alcohol, refined carbohydrates, fat and meat; or poor chewing of food.⁷ However, adequate production and activity of digestive enzymes is needed for the proper breakdown of protein, lipids and carbohydrates.¹ As a result, the absorption of nutrients, including the fat-soluble vitamins A, D, E and K, is also dependent on the digestive function of enzymes.¹ By increasing the activity of enzymes in the small intestine, enzyme supplementation can help promote proper nutrient digestion and absorption.^{1†}

In addition to supporting nutrient digestion, enzymes have also been studied for their role in reducing muscle soreness following exercise.⁸ In one randomized, double-blind, placebo-controlled trial, supplementation with V-Enzymes Chewable's multi-enzyme formula significantly reduced muscle soreness and tenderness after eccentric exercise.⁸ Research suggests that enzymes may work to support muscle recovery after exercise by mediating the production of cytokines and reactive oxygen species.^{8†}

REFERENCES

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