



GENESTRA
BRANDS®

Pancreatin

ENZYME FORMULA



Delayed-release pancreatic enzyme formulation

- Helps to decrease bloating after high-caloric, high-fat meals
- Aids digestion
- Provides a mixture of digestive enzymes, such as protease, amylase, lipase, chymotrypsin and trypsin
- Improved formula
 - Higher concentration of lipase, chymotrypsin and trypsin
 - Formulated with delayed-release capsules for targeted release in the intestine
 - New, easier-to-swallow capsule format

Pancreatin is a digestive aid formula that helps to decrease bloating after high-caloric, high-fat meals. It provides a combination of pancreatic enzymes, including lipase, amylase and protease, which break down fats, carbohydrates and proteins, respectively.¹ Chymotrypsin and trypsin are also present in pancreatic secretions and further contribute to protein digestion.¹ Adequate activity of pancreatic enzymes is critical for proper nutrient digestion and absorption, including the absorption of fat-soluble vitamins.^{2,3} Pancreatin contains enzymes that act like those normally secreted by the pancreas, aiding digestion of nutrients. Supplementation with pancreatic enzymes has also been shown to significantly reduce the common postprandial complaints associated with caloric, high-fat meals, including bloating, gas and fullness.⁴ As pancreatic enzymes are sensitive to low pH, Pancreatin is specifically formulated with delayed-release capsules that resist stomach acid for targeted delivery to the duodenum and allow optimal enzyme activity.

EACH CAPSULE CONTAINS:

Pancreatic Enzymes (from porcine pancreas).....	370 mg
Yielding	
Protease Activity	37000 USP
Amylase Activity	37000 USP
Lipase Activity.....	8880 USP
Trypsin (from porcine pancreas)	20 mg / 1500 USP
Chymotrypsin (from bovine pancreas)	8 mg / 8000 USP

Non-Medicinal Ingredients: Delayed-release capsule (hypromellose, gellan gum), cellulose, ascorbyl palmitate, silica, lactose

Contains: Milk

Recommended Adult Dose: Take one capsule three times daily, with each meal or immediately before a meal, or as recommended by your healthcare practitioner. Consult your healthcare practitioner for use beyond four weeks. Use the smallest effective dose which controls symptoms.

Product Size: 60 vegetable capsules **Product Code:** 10511-60

NPN 80073256



REFERENCES

1. Whitcomb, DC, Lowe, ME. Dig Dis Sci. 2007; 52(1): 1-17.
2. Roxas, M. Altern Med Rev. 2008; 13(4): 307-14.
3. Hackert, T, Schütte, K, Malfertheiner, P. Viszeralmedizin. 2014; 30(3): 190-7.
4. Suarez, F, Levitt, MD, Adsheed, J, Barkin, JS. Dig Dis Sci. 1999; 44(7): 1317-21.

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Pancreatin

ENZYME FORMULA

Scientific Rationale:

The pancreas is an organ located behind the stomach that plays a central role in digestion.¹ It produces enzymes, such as proteases, lipase and amylase, which are critical to the digestive process.¹ These secretions are released into the duodenum, where they are required for proper nutrient digestion.^{2,3} Macronutrients must be digested before they can be absorbed by the body.⁴

Protein digestion begins in the stomach as pepsin and stomach acid break down and denature polypeptides.³ In the small intestine, protein digestion continues with trypsin and chymotrypsin, two key proteases produced by the pancreas.³ These enzymes hydrolyze polypeptides into amino acids and oligopeptides, which may be further metabolized into amino acids, dipeptides and tripeptides by brush-border enzymes.³ The amino acids, dipeptides and tripeptides produced are then absorbed by the intestinal epithelial cells.³ Trypsin is especially important as it also helps to regulate the activity of other enzymes in the digestive tract.¹

The digestion of lipids begins in the mouth with lingual lipase, and continues in the stomach with the addition of gastric lipase.³ However, pancreatic lipases are responsible for a majority of lipid hydrolysis in the digestive system, helping to convert triglycerides into fatty acids and monoglycerides.^{1,3} Once these breakdown products enter the intestinal epithelial cells, they are resynthesized into triglycerides and packaged alongside proteins, phospholipids and cholesterol into chylomicrons.³ Newly formed chylomicrons exit the epithelial cell, pass through lymphatic vessels and eventually enter the bloodstream via the thoracic duct.³

Starch digestion begins in the mouth with salivary amylase, although the majority is hydrolyzed in the small intestine with pancreatic amylase.³ Pancreatic amylase helps break down starch into disaccharides and trisaccharides, such as maltose and maltotriose.³ Because only monosaccharides are absorbed by the intestinal epithelium, these breakdown products are further hydrolyzed into monosaccharides (such as glucose) by brush border enzymes before absorption.^{1,3}

Adequate production and activity of pancreatic enzymes is needed for the proper digestion of protein, lipids and carbohydrates.⁴ 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 pancreatic enzymes.⁴ Impaired digestion of nutrients can lead to weight loss or common gastrointestinal complaints, including bloating, abdominal discomfort, loose stools and steatorrhea (fatty stools).⁵ By increasing the activity of enzymes in the small intestine, enzyme supplementation has been found to promote proper nutrient digestion and absorption.⁴

The consumption of certain foods, including meals that are high in calories and fat, can also result in bloating.⁶ Research has demonstrated that intake of pancreatic enzyme supplements can decrease bloating after a caloric, high-fat meal. In one study, participants consumed a pancreatic enzyme supplement after a caloric, high-fat meal at 7:00 a.m.⁶ Gastrointestinal symptoms were recorded for the next 15-17 hours.⁶ The study authors reported that pancreatic enzyme supplement significantly decreased bloating during the entire recording period, while bloating, gas and fullness were significantly reduced during the period from dinner to bedtime.⁶ This demonstrates the ability of pancreatic enzyme supplements to support gastrointestinal comfort.⁶

Pancreatin is an enzyme formula that provides a variety of proteases, as well as lipase and amylase. These exogenous enzymes act like the digestive enzymes normally secreted by the pancreas, aiding digestion in the intestines.⁴ Pancreatin contains porcine pancreas, which is particularly rich in amylase and lipase, along with bovine pancreas, which is especially rich in proteolytic (protein-degrading) enzymes.² Because pancreatic enzyme activity can be decreased by the low pH in the stomach, Pancreatin is formulated with delayed-release capsules that resist stomach acid, allowing for targeted delivery of enzymes to the intestines and optimal nutrient digestion.⁷

REFERENCES

- Whitcomb, DC, Lowe, ME. *Dig Dis Sci.* 2007; 52(1): 1-17.
- Roxas, M. *Altern Med Rev.* 2008; 13(4): 307-14.
- Goodman, BE. *Adv Physiol Educ.* 2010; 34(2): 44-53.
- Keller, J, Layer, P. *Gut.* 2005; 54(Suppl VI): vi1-28.
- Hackert, T, Schütte, K, Malfertheiner, P. *Viszeralmedizin.* 2014; 30(3): 190-7.
- Suarez, F, Levitt, MD, Adsheed, J, Barkin, JS. *Dig Dis Sci.* 1999; 44(7): 1317-21.
- Armo, R. *Capsugel®.* (2014). *DRcaps® Capsules Achieve Delayed Release Properties for Nutritional Ingredients in Human Clinical Study.* [White Paper].

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