Stomach Digestion

The stomach is a muscular digestive system organ that is the first main site of digestion. The first main type of cells are chief cells, which secrete a zymogen (inactive enzyme) called pepsinogen. Pepsinogen is activated by hydrogen ions into pepsin, which then partially digests proteins. This happens by breaking the protein down into smaller peptide chains.Another important type of cell found in the stomach are mucous cells, which secrete mucus to help coat and protect the stomach muscles from the harsh, acidic, proteolytic environment created inside of the stomach. They also secrete bicarbonate ions to help neutralize remaining acid after food has moved on to the small intestine.G cells secrete gastrin, which stimulates hydrochloric acid release from parietal cells and causes the stomach to mix its contents. This HCl is the source of hydrogen ions for pepsinogen activation, which also helps denature proteins and kill bacteria. Finally, the parietal cells secrete intrinsic factor, which is needed for vitamin B12 absorption.



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Characteristics

Chief Cells Secrete Pepsinogen
Chief kicking over Pimp-Cinnamon into stomach
Chief cells in the stomach secrete pepsinogen, which is activated by H+ into pepsin, a protease (digests protein).

Pepsinogen Turned to Pepsin By H+
Pimp-Cinnamon turns into Pimp in pool of H+
Pepsinogen is activated by the hydrogen ions in the stomach (from HCl) and turned into Pepsin.

Protein Breakdown Begins
Steak with Start flag and Bite taken out
Protein break down begins in the stomach and finishes in the duodenum of the small intestine.

Mucous Cells Secrete Mucus and Bicarbonate
Nose Secreting Mucus and Bi-Car-Bombs into stomach
Mucous cells in the stomach secrete mucus and bicarbonate. Mucus protects the muscles of the stomach from erosion due to the acidic and proteolytic nature of the inside of the stomach. Bicarbonate also helps protect the stomach by neutralizing some of the remaining acid after the stomach's contents pass on to the small intestine.

G Cells Secrete Gastrin
Gangster pouring Gas
G cells of the stomach secrete gastrin, which stimulate further secretions from the stomach.

Gastrin Stimulates Parietal Cell HCl Release
Pirate pours Acid after drinking Gas
Gastrin stimulates parietal cells into releasing more hydrochloric acid. Gastrin also induces mixing of the contents of the stomach to form an acidic semifluid mixture called chyme.

Parietal Cells Secrete Intrinsic Factor
Pirate dropping N-triscuits into the stomach
Parietal cells also release intrinsic factor which is required for the absorption of vitamin B12.

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