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Functions of Major Digestive Secretions

Saliva

Serous (watery) moistens food and mucous membrane; lysozyme kills bacteria
Salivary amylase Starch digestion (conversion to maltose and isomaltose)
Mucus Lubricates food; protects gastrointestinal tract from digestion by enzymes

Esophagus

Mucus lubricates the esophagus; protects the esophagus lining from abrasion and allows food to move more smoothly through the esophagus

Gastric Secretions

Hydrochloric acid Decreases stomach pH to activate pepsinogen into Pepsin, the active form of pepsinogen, digests protein into smaller peptide chains. Mucus Protects stomach lining from digestion

Liver

Bile salts emulsify fats, making them available to intestinal lipases; help make end products Sodium glycocholate (bile salt) soluble and available for absorption by the intestinal mucosa; aid peristalsis. Many Sodium taurocholate (bile salt) of the other bile contents are waste products transported to the intestine for disposal.
Cholesterol
Biliverdin
Bilirubin
Mucus
Fat
Lecithin
Cells and cell debris

Pancreas

Trypsin Digests proteins (breaks polypeptide chains at arginine or lysine residues)
Chymotrypsin Digests proteins (cleaves carboxyl links of hydrophobic amino acids)
Carboxypeptidase Digests proteins (removes amino acids from the carboxyl end of peptide chains)
Pancreatic amylase Digests carbohydrates (hydrolyzes starches and glycogen to form maltose and isomaltose)

Pancreatic lipase Digests fat (hydrolyzes fats—mostly triacylglycerols—into glycerol and fatty acids)
Ribonuclease Digests ribonucleic acid
Deoxyribonuclease Digests deoxyribonucleic acid (hydrolyzes phosphodiester bonds)
Cholesterol esterase Hydrolyzes cholesterol esters to form cholesterol and free fatty acids
Bicarbonate ions Provides appropriate pH for pancreatic enzymes

Small Intestine Secretions
Mucus Protects duodenum from stomach acid, gastric enzymes, and intestinal enzymes; provides adhesion for fecal matter; protects intestinal wall from bacterial action and acid produced in the feces.
Aminopeptidase Splits polypeptides into amino acids (from amino end of chain).
Peptidase splits amino acids from polypeptides.
Enterokinase Activates trypsin from trypsinogen
Amylase Digests carbohydrates
Sucrase Splits sucrose into glucose and fructose
Maltase Splits maltose into two glucose molecules
Isomaltase Splits isomaltose into two glucose molecules
Lactase Splits lactose into glucose and galactose
Lipase Splits fats into glycerol and fatty acids