

Structure of the Pancreas Key Information

The pancreas is a large, glandular organ located behind the stomach that plays both endocrine and exocrine roles. Structurally, it is made up of clusters of cells called islets of Langerhans, which are responsible for its endocrine function. These islets contain several types of cells — mainly α (alpha) cells, which secrete glucagon, and β (beta) cells, which secrete insulin, both crucial in blood glucose regulation. The majority of the pancreas, however, consists of acinar cells that form the exocrine tissue, producing and secreting digestive enzymes into the small intestine via the pancreatic duct. This dual structure enables the pancreas to maintain both digestive efficiency and homeostasis of blood glucose levels.

Key words & definitions

Key word	Key information
Endocrine role	The function of releasing hormones directly into the bloodstream to regulate body processes.
Exocrine role	The function of producing and secreting substances, such as digestive enzymes, through a duct to a specific location.
Islets of Langerhans	Clusters of endocrine cells in the pancreas responsible for hormone secretion.
Alpha (α) cells	Cells in the islets of Langerhans that secrete glucagon.
Beta (β) cells	Cells in the islets of Langerhans that secrete insulin.
Glucagon	A hormone that increases blood glucose concentration by stimulating glycogen breakdown in the liver.
Insulin	A hormone that decreases blood glucose concentration by promoting glucose uptake and storage.