Histology Team 431

Leaders

Tamader Aloofy

Mohammed Aldaheri

Members

Ibtihal Al-Amer

Raghda Al Amri

Walaa Al Shehri

Abeer Al-Suwailem

Nouf Aboalsamh

Nasser Alsaleh

Ahmed Saleem

Mosaed Aldekhayel

Notes

Important

Pancreas

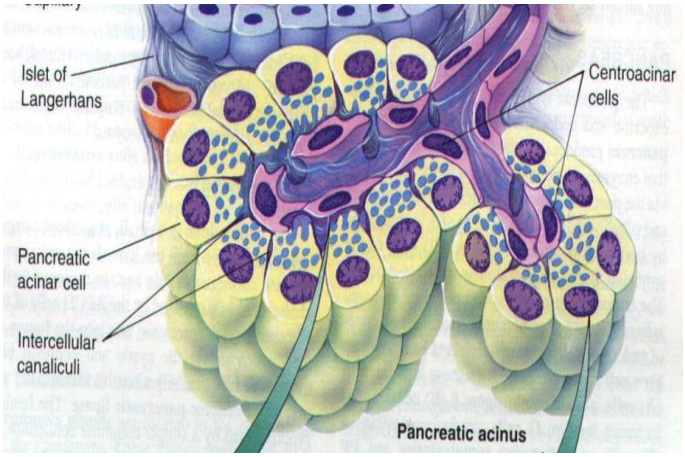
Stroma: capsule, septa & reticular fibers

Parenchyma

Exocrine part (acini & ducts): produces digestive pancreatic enzymes

Endocrine part (islets of Langerhans): produces hormones

Exocrine part



Pancreatic Acini:

Serous acini with:

Centroacinar cells (the beginning of the ducts).

No myoepithelial cells.

Nuclei are basal.

Cytoplasm:

Basal part basophilic (due to abundant rER).

Apical part acidophilic (due to secretory granules).

Duct System

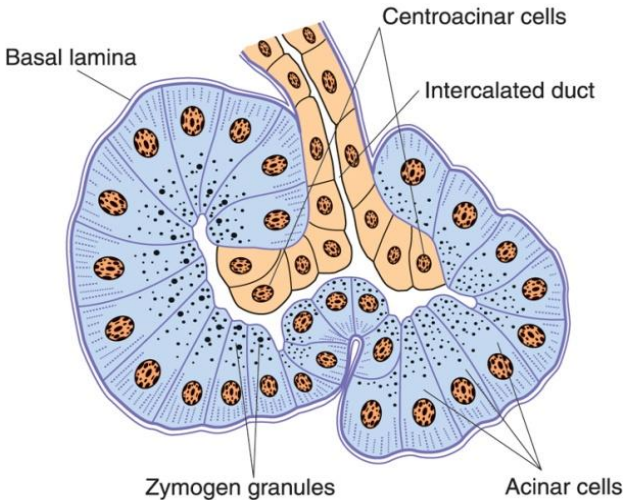
Centroacinar cells.

Intercalated ducts (low cuboidal).

Intralobular ducts (NOT prominent).

Interlobular ducts.

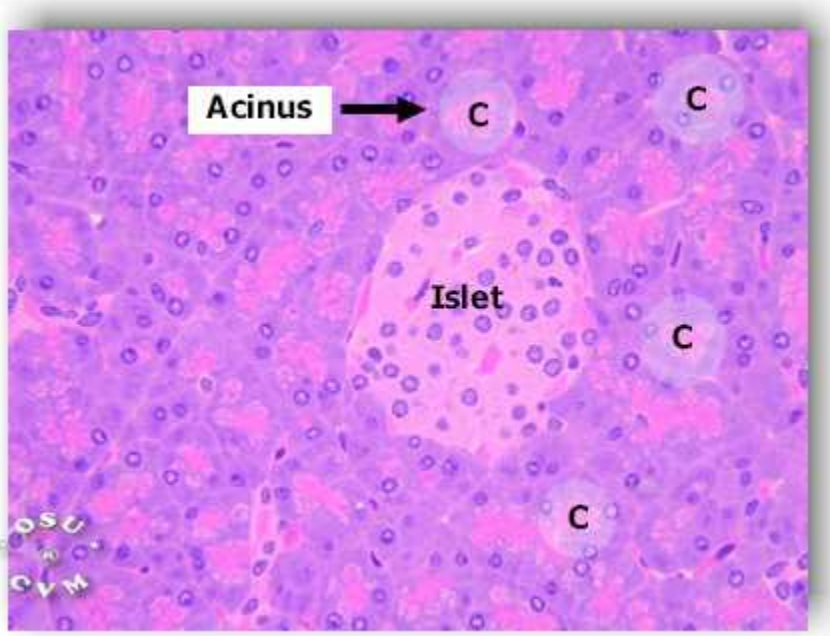
Main pancreatic duct



Endocrine part

Islets of Langerhans:

Pale-staining spherical collections of endocrine cells, scattered among the acini.



Richly vascularized by fenestrated capillaries (release hormones directly into blood)

Each islet is surrounded and supported by reticular fibers.

1 million islets in human pancreas.

Most numerous in the tail of pancreas

IMPORTANT TABLE

Cell of the islet	β (B) cells	α (A) cells	δ (D) cells	G cells	Pp cells
Percentage	70%of islet cells	15-20%	5-10%	1%	
Concentrated in	center	Periphery	Scattered throughout the islet.		
Function	Produced insulin	Glucagon	somatostatin	gastrin	Pancreatic polypeptide

Granules of α cell are much more numerous; more tightly packed, smaller, and denser than those of β cells.

Granules of δ cell are less dense than those of β and α cells.

Notes :

- Both somatostatin(inhibit insulin, glucagon and exocrine secretion) + pancreatic polypeptide(inhibit exocrine secretion) work as paracrine.
- Insulin inhibits glucagon, while glucagon stimulates insulin.
- To differentiate between these cells either use light microscope with immunochemistry, each cell has its own receptor so, they created antibodies for these receptor (when they attached they give a color) or by using electron microscope.

Questions

Q1-Where is insulin secreted from?

A- Alpha cells

B- Beta cells

C- Gamma cells

D- Delta cells.

Q2- Where is the most numerous place for islets of langerhans ?

A- Head of the pancreas.

B- Tail of the pancreas.

C- Body of the pancreas.