HISTOLOGY OF PANCREAS

Red: important.
Black: in male|female slides.
Gray: notes|extra.

Editing file

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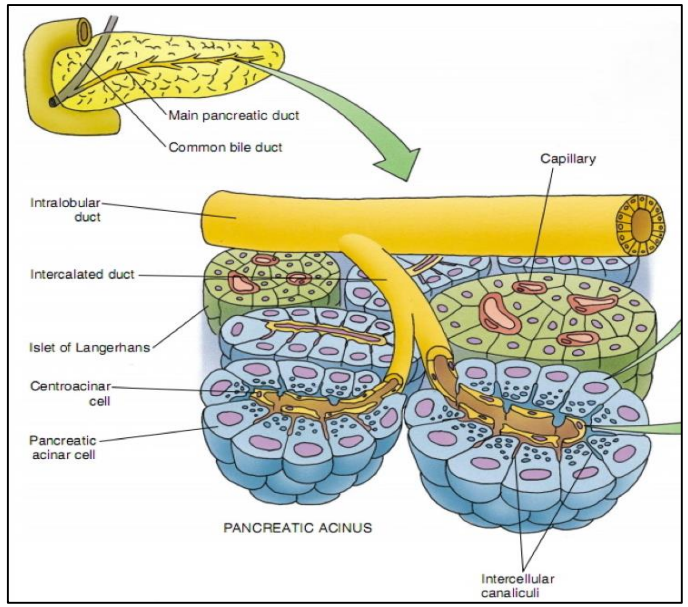
➢ OBJECTIVES

- Describe the **endocrine part** of the pancreas within the **exocrine part**.
- Describe the **histological features** of the cells of islet of Langerhans.
- Describe the **function** of different cells of islets of Langerhans

PANCREAS

Stroma

capsule, septa & reticular fibers.



Parenchyma

Pancreas is a **mixed** gland:

- **Exocrine part (acini & ducts):** produces digestive pancreatic enzymes.
- **Endocrine part (islets of Langerhans):** produces hormones.

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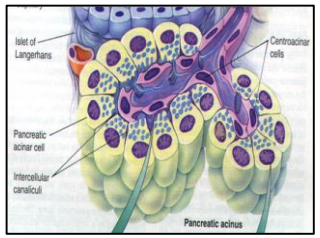
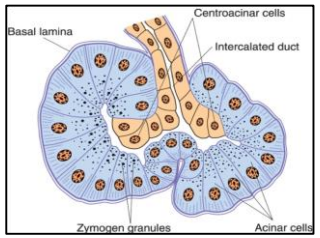
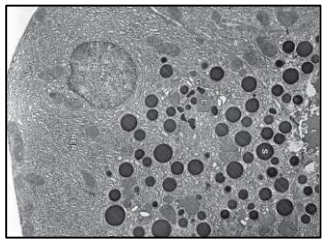
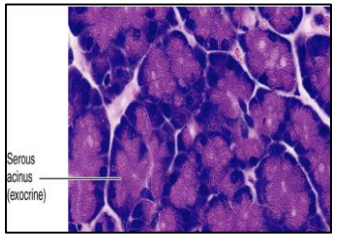
➢ Exocrine Pancreas

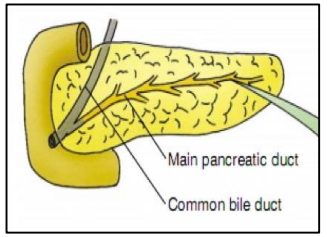
Pancreatic Acini	Pancreatic Acinar Cells	Duct System
○ They are serous acini: secreting a thin fluid rich in digestive pancreatic enzymes. ○ Centroacinar cells: Their nuclei appear in the center of the acini. They represent the beginning of the ducts. ○ No myoepithelial cells around the acini.	○ Pyramidal in shape. ○ Nuclei are basal. ○ Cytoplasm: • **B**asal part **B**asophilic (due to abundant rER). • **A**pical part **A**cidophilic (due to secretory granules).	○ Centroacinar cells. ○ **Inter**calated ducts (low cuboidal). ○ **Intra**lobular ducts (NOT prominent). in parotid gland Intralobular ducts is prominent ○ Interlobular ducts. ○ Main pancreatic duct.

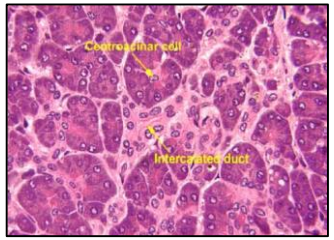








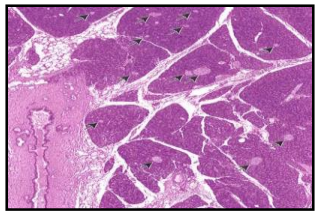


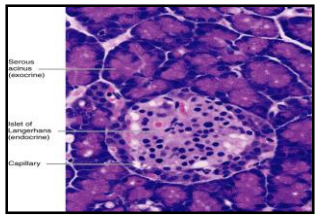


➢ Endocrine Pancreas

Islets of Langerhans:

- Pale-staining spherical collections of endocrine cells, scattered among the acini.
- Richly vascularized by fenestrated capillaries.
- Each islet is surrounded and supported by reticular fibers.
- 1 million islets in human pancreas.
- Most numerous in the tail of pancreas.





Cells of the Islets:

5 types of cells in each islet

Cannot be differentiated from one another by routine stains. We can differentiated Between 5 cell by immune stain

ß (B) cells	α (A) cells	δ (D) cells	G cells	PP cells
• Constitute 70% of islet cells. • Concentrated in islet center. • Function: secrete insulin which ↓ blood sugar.	• Constitute 15-20%. • Concentrated in islet periphery. • Granules are much more numerous, more tightly packed, smaller, and denser than those of ß cells. • Function: secrete glucagon which ↑ blood sugar.	• Constitute 5-10% • Scattered throughout the islet. • Granules are less dense than those of ß and α cells. • Function: secrete somatostatin which ↓ release of hormones from endocrine pancreas and enzymes from exocrine pancreas.	• Constitute 1% of islet cells. • Scattered throughout the islet. • Function: secrete gastrin which ↑ production of HCl by parietal cells of the stomach.	• Constitute 1% of islet cells. • Scattered throughout the islet. • Function: secrete pancreatic polypeptide which ↓ exocrine secretions of pancreas.

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QUESTIONS:

Q1:wher is the most of Islets of Langerhans located in?

A) tail B) body C) head

Q2: which cell is secrete gastrin?

A) α B) Β C) G

Q3: which hormones that secreted by δ cells ?

A) somatostatin B) insulin C) pancreatic polypeptide

Q4: Exocrine part produces.....?

A) hormones B) digestive enzymes C) mucus

Q5: which type of Acini located in pancreas?

A) serous acini B)mucus acini C) Mucoserous (Mixed) Acini

Q6: Which cell of the following is the most numerous in islets of Langerhans?

A) α B) Β C) G

1-A
2-C
3-A
4-B
5-A
6-B

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