



Motivational Corner:

“The only way to get what you want in this world is through hard work..”

Please check out the [editing file](#) before starting the lecture.



Objectives:

The student should be able to describe:

- 1.The endocrine part of the pancreas within the exocrine part.
- 2.The histological features of the cells of islet of Langerhans.
- 3.The function of different cells of islets of Langerhans.

5-

Pancreas.

Extra notes: Gray

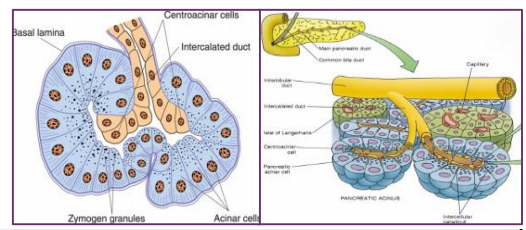
Important notes: Red

Revised by

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Pancreas



Stroma:

Capsule

Septa

Reticular fibers

Parenchyma:

Pancreas is a **mixed** gland:

Exocrine part

Endocrine part

(acini & ducts):
produces **digestive pancreatic enzymes**.

(Islets of Langerhans):
produces **hormones**.

Pancreatic Acini:

Duct System:

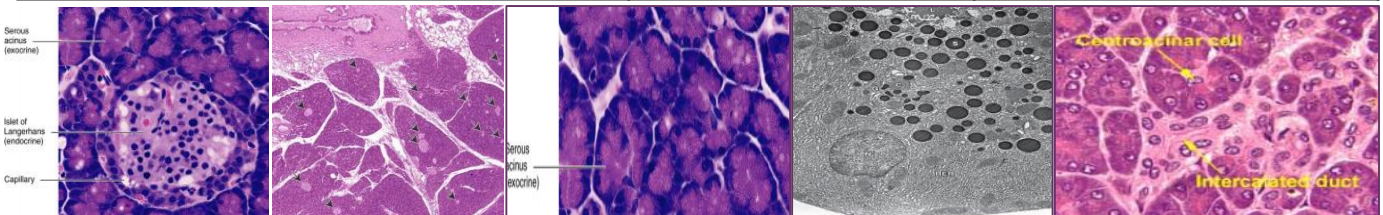
Islets of langerhans:

- **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.
- **Pancreatic Acinar Cells:**
 - **Pyramidal** in shape.
 - **Nuclei** are **basal**.
 - **Cytoplasm:**
 - **Basal** part **basophilic** (due to abundant rER).
 - **Apical** part **acidophilic** (due to secretory granules).

- **Centroacinar cells.**
- **Intercalated ducts (low cuboidal).**
- **Intralobular ducts (NOT prominent).**
- **Interlobular ducts.**
- **Main pancreatic duct.**

- 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**.
- There are 5 cells of the islets and they Can **not** be differentiated from one another by routine stains.

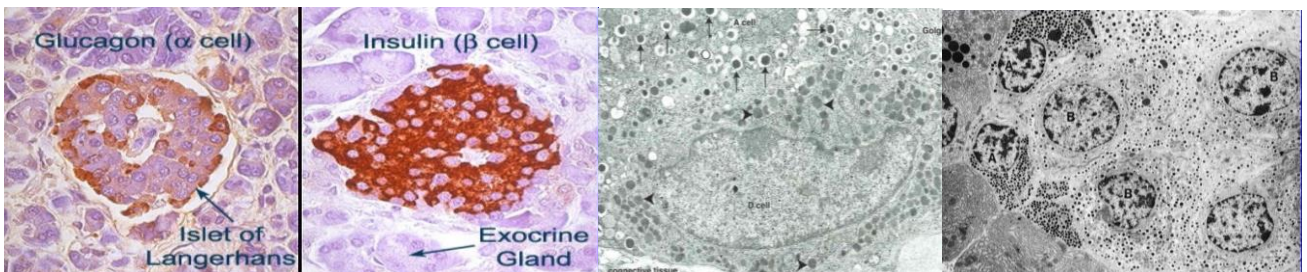
Pancreas



+ Endocrine pancreas

Cells of the Islets :

β (B) cells:	α (A) cells:	δ (D) cells:	G cells:	PP cells:
<ul style="list-style-type: none"> - Constitute 70% of islet cells. - Concentrated in islet center. 	<ul style="list-style-type: none"> - Constitute 15-20%. - Concentrated in islet periphery. - Granules are much more numerous, more tightly packed, smaller, and denser than those of β cells. 	<ul style="list-style-type: none"> - Constitute 5-10% of islet cells. - Scattered throughout the islet. - Granules are less dense than those of β and α cells. 	<ul style="list-style-type: none"> - Constitute 1% of islet cells. - Scattered throughout the islet. 	<ul style="list-style-type: none"> - Constitute 1% of islet cells. - Scattered throughout the islet.
Function:	Function:	Function:	Function:	Function:
<p>Secrete insulin which \downarrow blood sugar.</p>	<p>Secrete glucagon which \uparrow blood sugar.</p>	<p>Secrete somatostatin which \downarrow release of hormones from endocrine pancreas and enzymes from exocrine pancreas.</p>	<p>Secrete gastrin which \uparrow production of HCl by parietal cells of the stomach.</p>	<p>Secrete pancreatic polypeptide which \downarrow exocrine secretions of pancreas.</p>





MCQs

5c
4a
3c
2b
1a

1) Where is insulin secreted from?

- a. Alpha cells
- b. Beta cells
- c. Gamma cells

2) Where in the pancreas are islets of langerhans most numerous?

- a. Head
- b. Tail
- c. Body

3) What is the classification of the pancreas?

- a. Exocrine
- b. Endocrine
- c. Both exocrine and endocrine

4) Glucagon will be release to?

- a. Increase blood glucose level
- b. Decrease blood glucose level
- c. A & B

5) Somatostatin will be release to?

- a. Increase blood glucose level
- b. Decrease blood glucose level
- c. Decrease all enzymes secreted by pancreas



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— 435 —

**Thanks you for checking
our work, Good luck.**
-Team histology.