

# BILIARY PASSAGES & PANCREAS

## Objectives:

The student should be able to identify & describe the histological features of:

1. Intrahepatic biliary passages.
2. Extrahepatic bile ducts.
3. Gall bladder.
4. Exocrine pancreas.

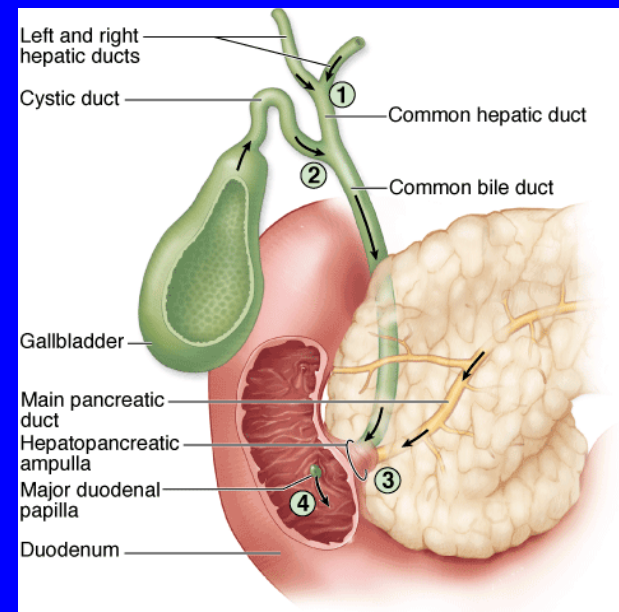
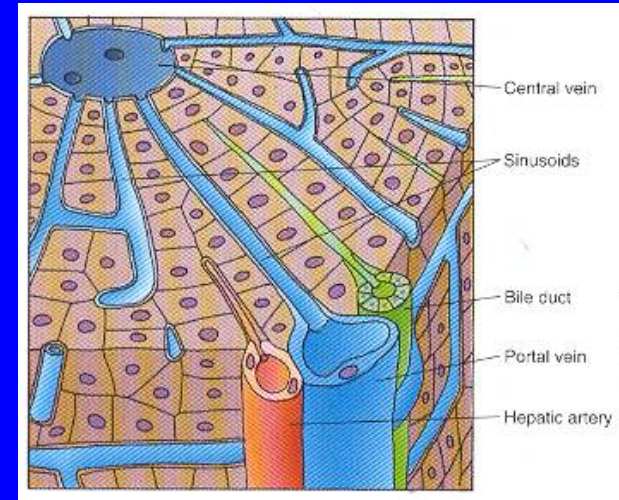
# Biliary Passages

## Intrahepatic passages:

- 1- Bile canaliculi.
- 2- Bile ductules (canals of Hering).
- 3- Interlobular bile ducts.

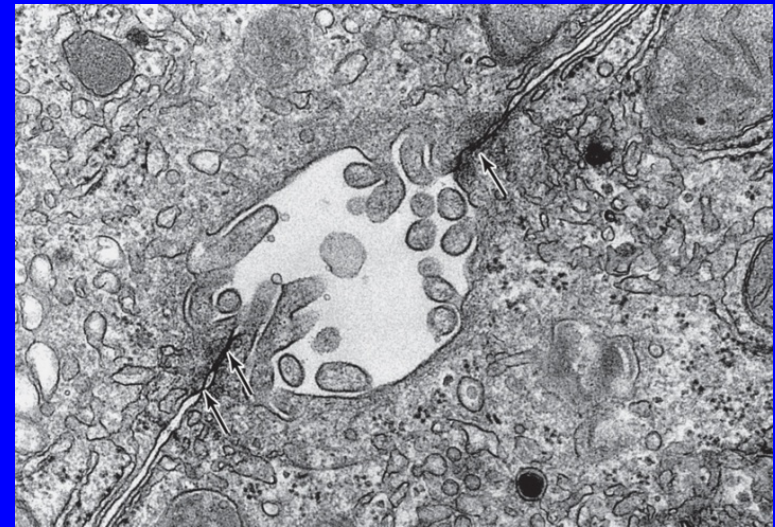
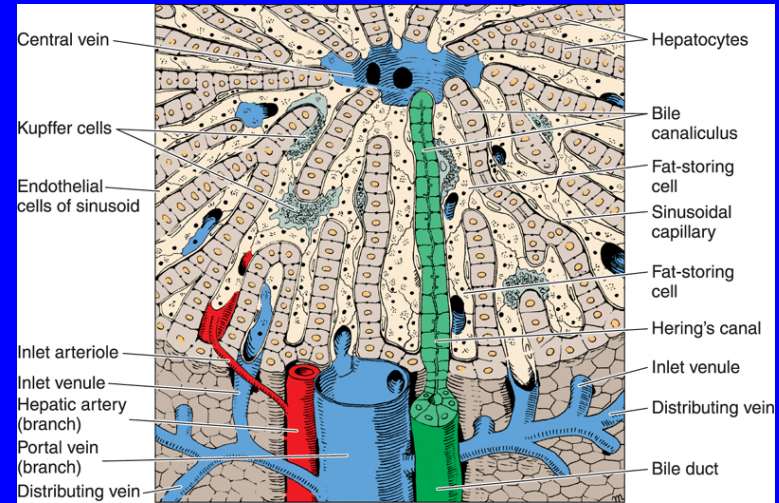
## Extrahepatic passages:

- 4- Right & left Hepatic ducts.
- 5- Common hepatic duct.
- 6- Common bile duct.



# Bile Canaliculi

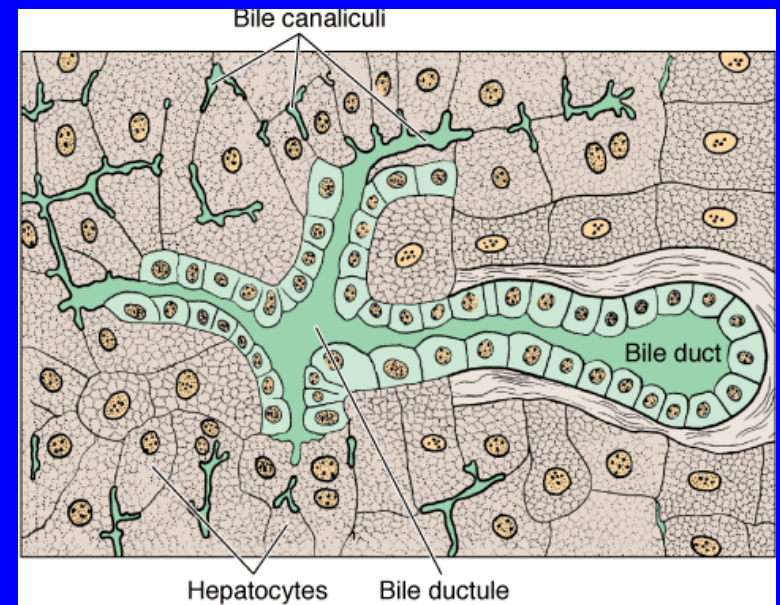
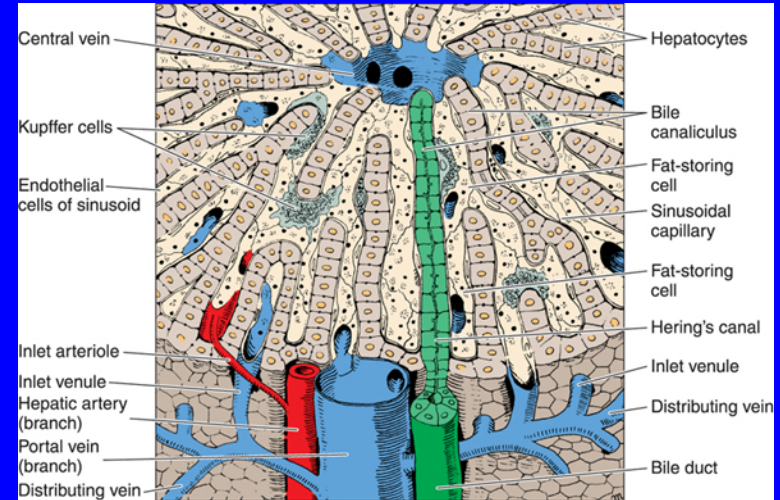
- Narrow channels located between hepatocytes, limited only by the **cell membranes of 2 hepatocytes**.
- They are the **first portions** of the bile duct system.
- **Microvilli** project from the hepatocyte into the bile canaliculi, thus increasing the surface area.
- **Tight junctions** between the cell membranes of the 2 hepatocytes prevent leakage of bile.





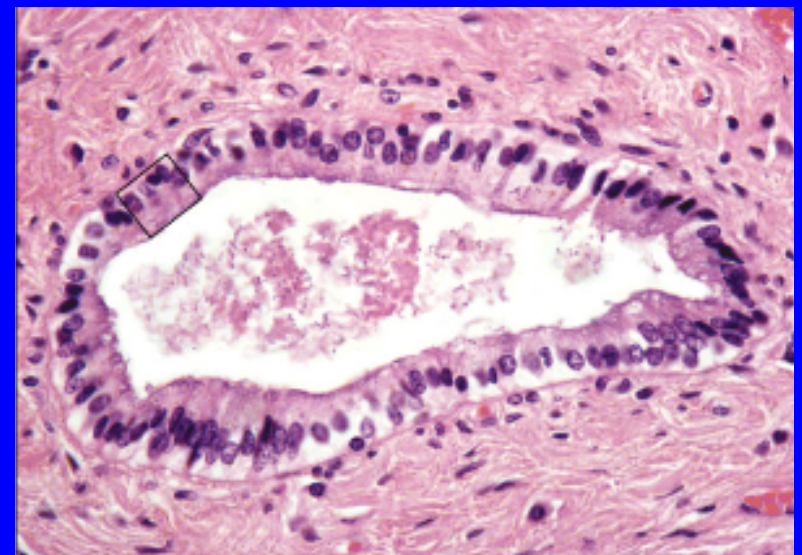
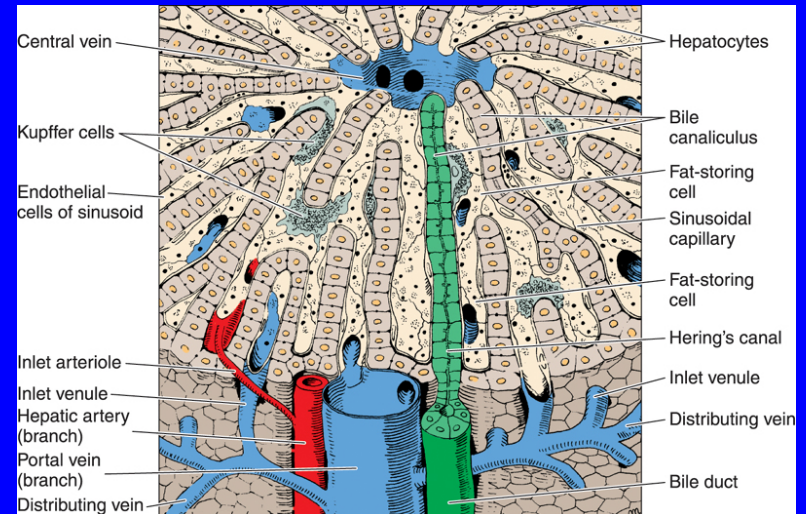
# Bile Ductules (Canals of Hering)

- Near the peripheral portal areas, bile canaliculi empty into **bile ductules** composed of cuboidal epithelial cells called **cholangiocytes**.
- After a short distance, these ductules collect and end in the **interlobular bile ducts** in the portal areas.



# Interlobular Bile Ducts

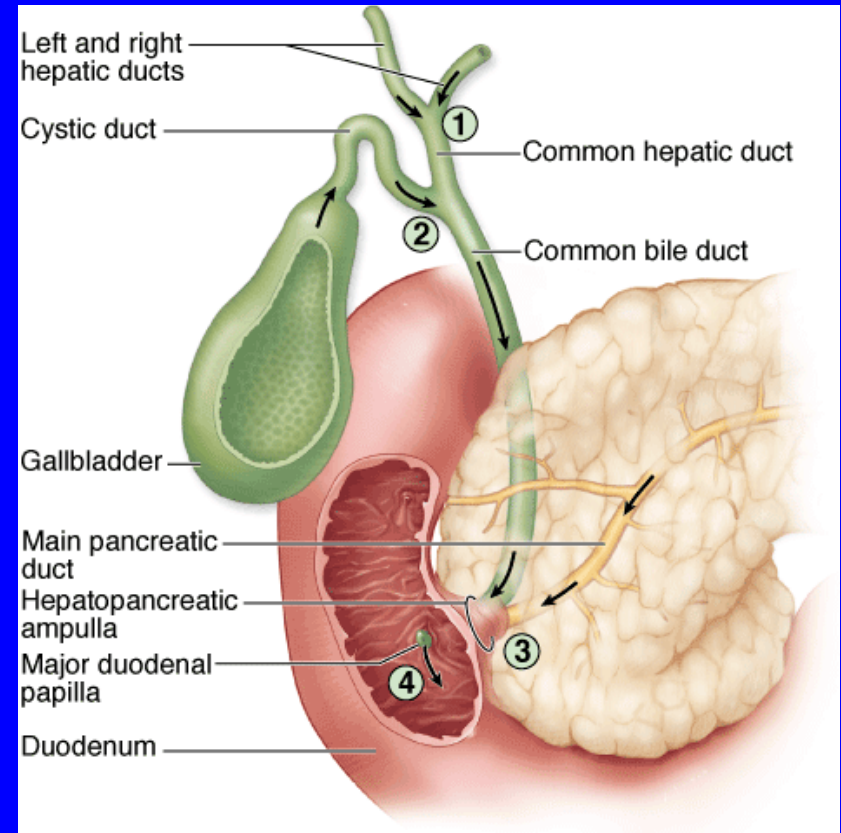
- Are in the portal areas.
- Lined by **simple cuboidal epithelium** (becomes simple columnar epithelium near the porta hepatis).
- Interlobular bile ducts merge to form larger ducts, which eventually unite to form the right and left hepatic ducts.





# Common Hepatic Duct

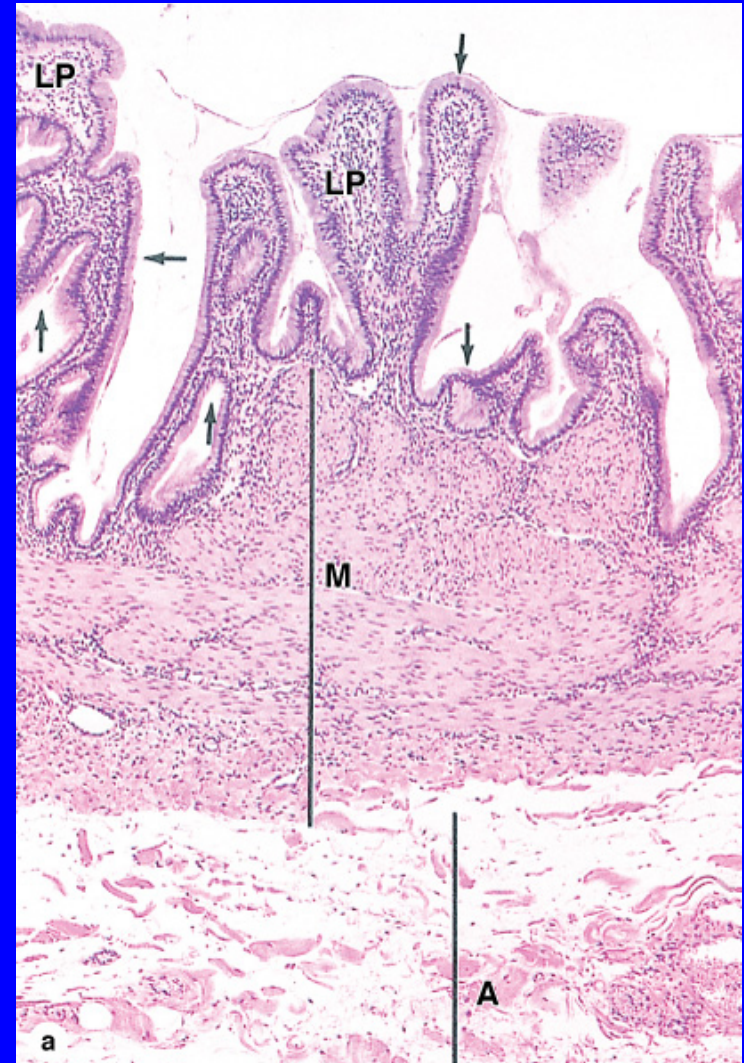
- Formed by union of the right & left hepatic ducts. It joins the cystic duct, arising from the gallbladder, forming the common bile duct.
- Similar in structure to the wall of gall bladder and other extrahepatic bile ducts.
- **Mucosa:**
  - Epithelium: Simple columnar.
  - Lamina propria.
- **Muscularis:** bundles of smooth muscle fibers in all directions.
- **Adventitia.**



# GALL BLADDER

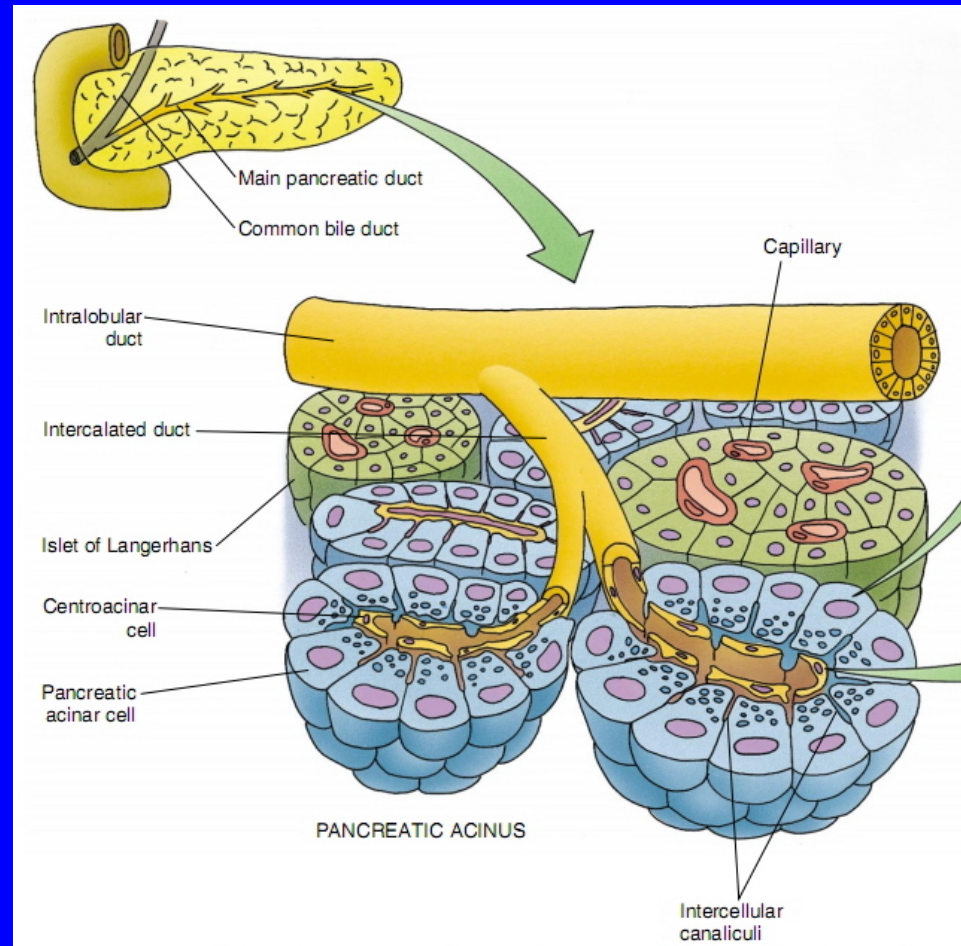
A saclike structure that stores, concentrates and releases bile. Its wall is formed of:

- **Mucosa:** highly folded.
  - Simple columnar epithelium.
  - Lamina propria: contains mucous glands in the neck of gall bladder.
- **Muscularis:** bundles of smooth muscle fibers oriented in all directions.
- **Serosa or adventitia.**



# 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.

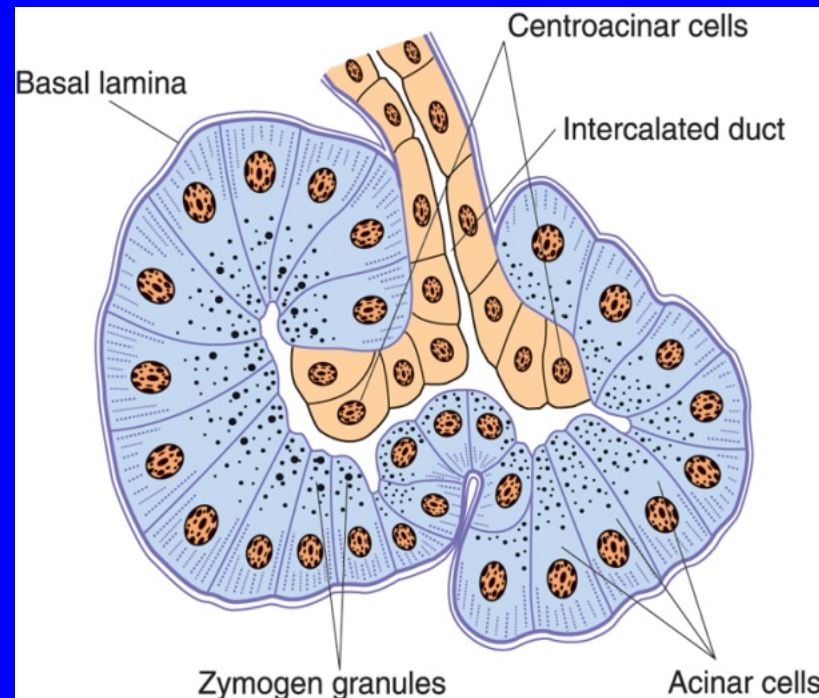
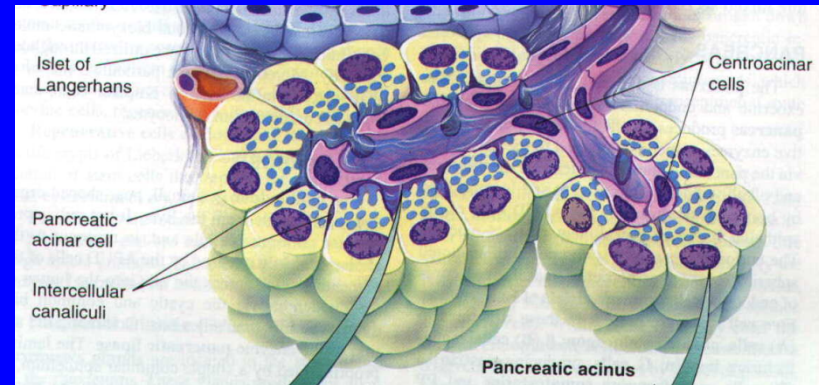




# Exocrine Pancreas

## Pancreatic Acini:

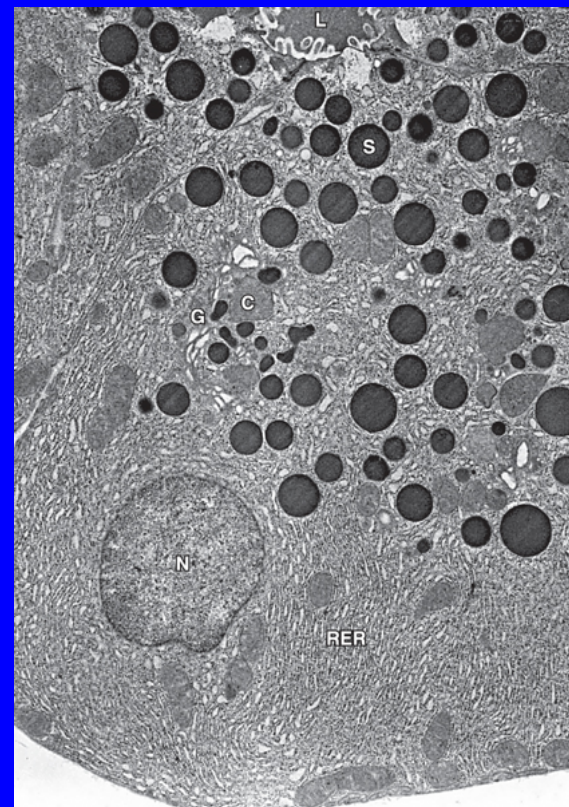
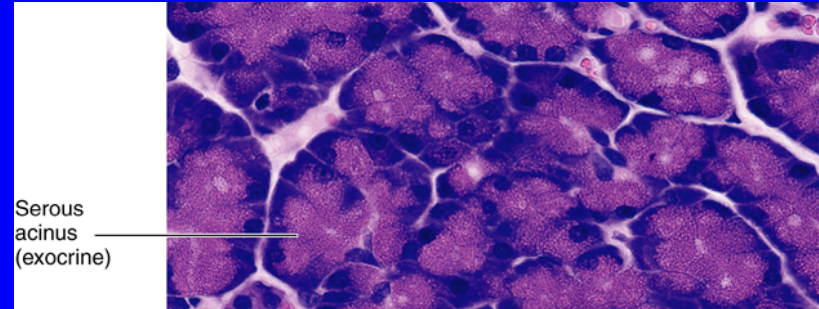
- They are serous acini: secreting a thin fluid rich in digestive pancreatic enzymes.
- Centroacinar cells: Their nuclei appear in the center of the acini. They represent the beginning of the ducts.
- No myoepithelial cells around the acini.



# Exocrine Pancreas

## Pancreatic Acinar Cells:

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

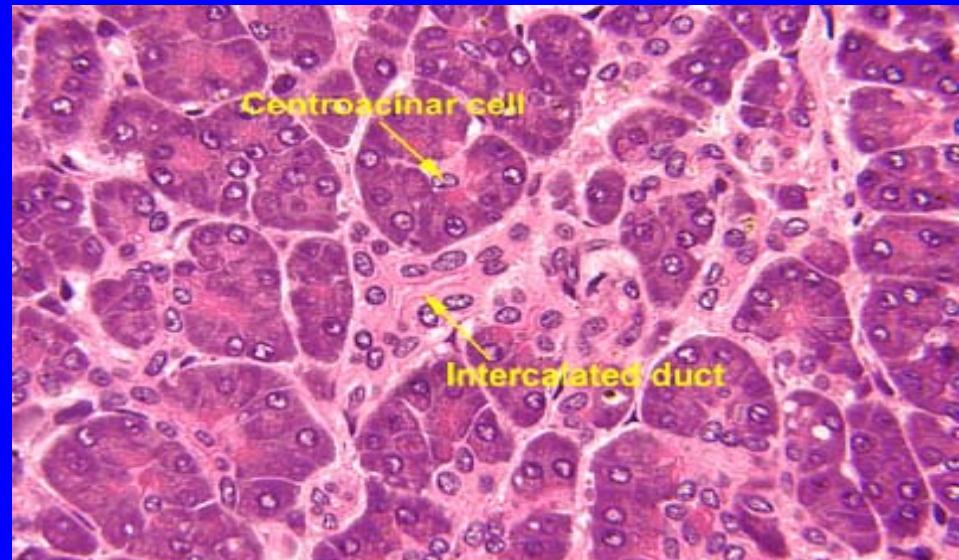
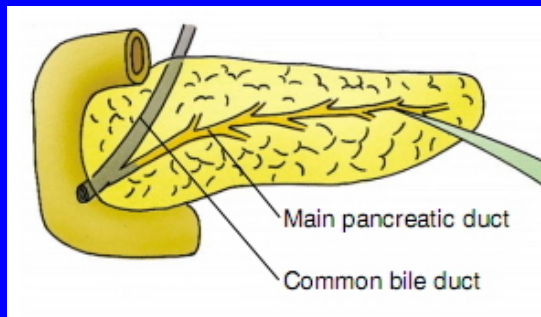
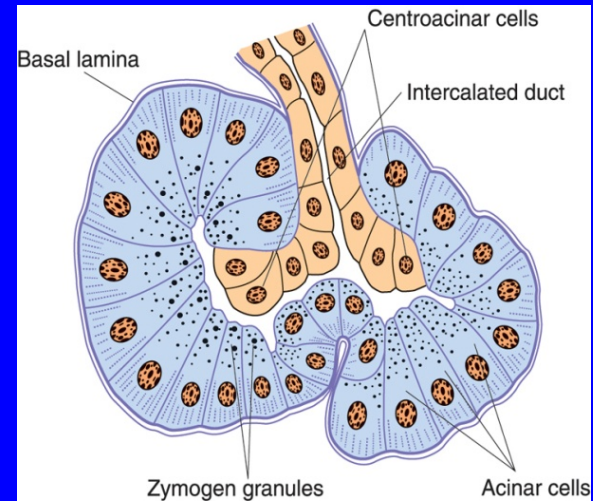




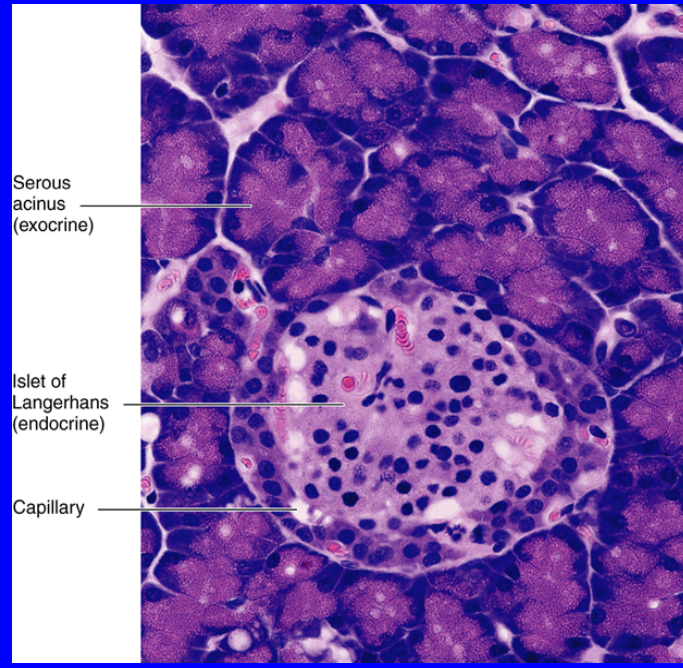
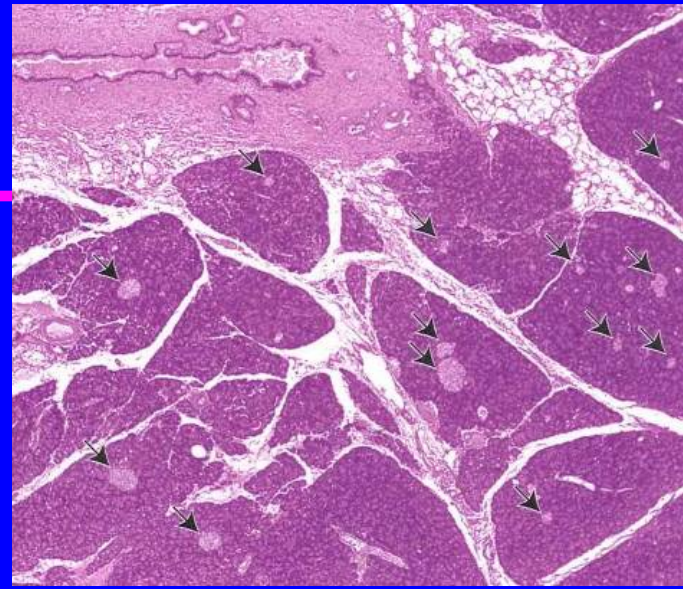
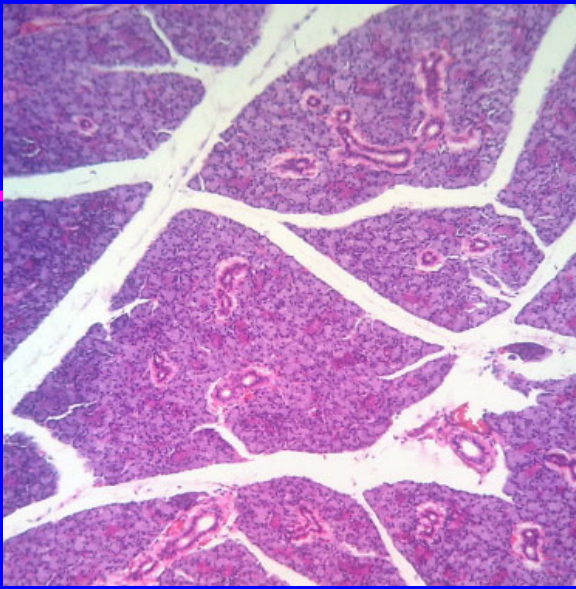
# Exocrine Pancreas

## Duct System:

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







Parotid gland

Pancreas

# *Best Wishes*

