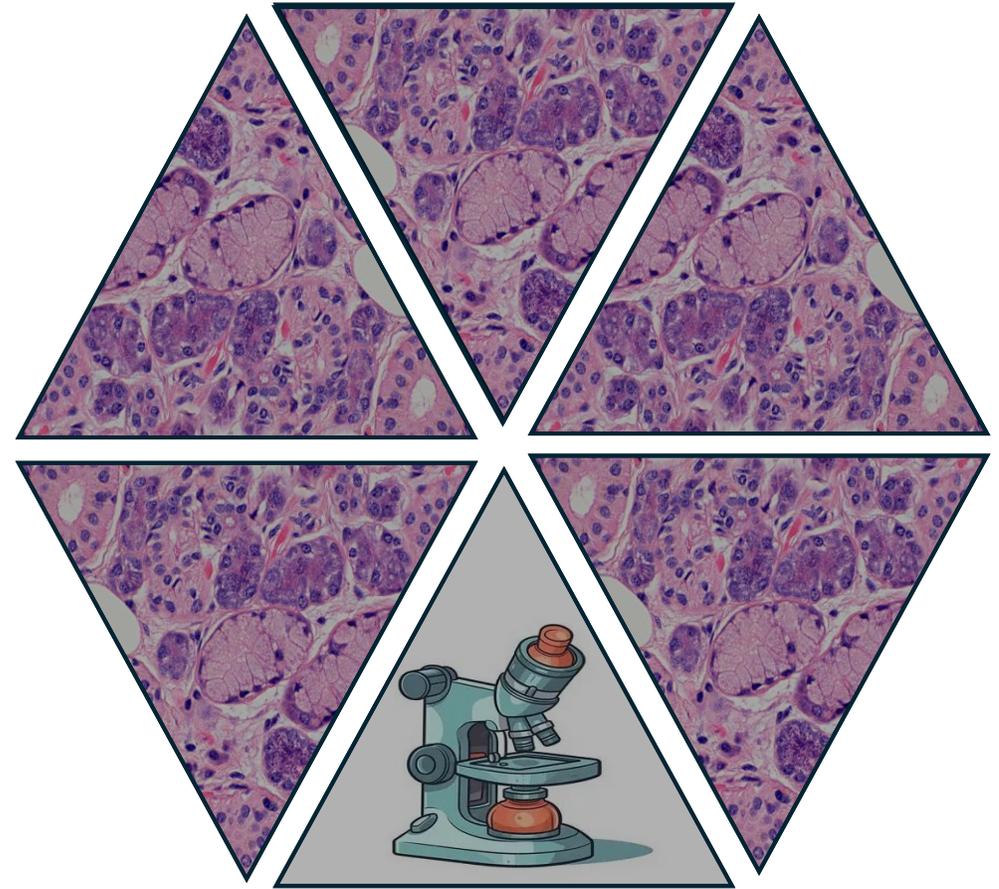


Lecture 2

# Histology of Salivary Glands

*Dr. Sherif*

2025



# Secretory unit of salivary gland

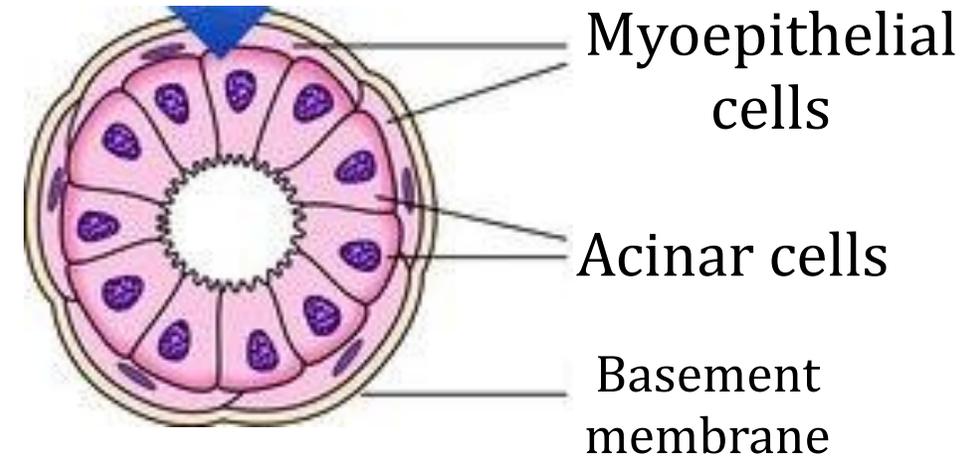
## Acini

### Definition of acini:

Acini are the secretory units of salivary glands.

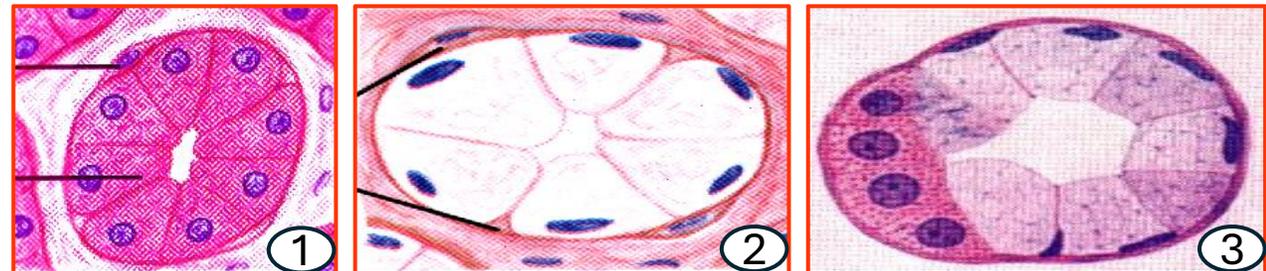
### Structure of acini:

- Acini are composed of a collection of cells encircling a lumen and covered by basement membrane.
- Myoepithelial cells are found between acinar cells and basement membrane.



### Types of acini:

1. **Serous acini:** Secrete serous saliva.
2. **Mucous acini:** Secrete mucous saliva.
3. **Mixed acini:** Secrete both serous and mucous saliva.



# Serous acini

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## Definition:

Serous acini are the unit structure of the parenchymal elements of serous gland.

## Composition:

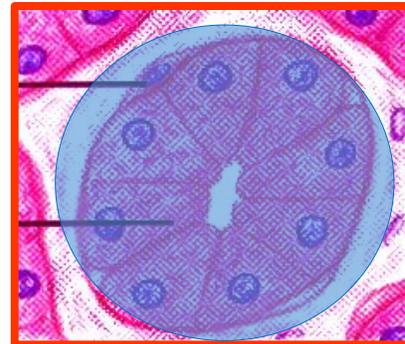
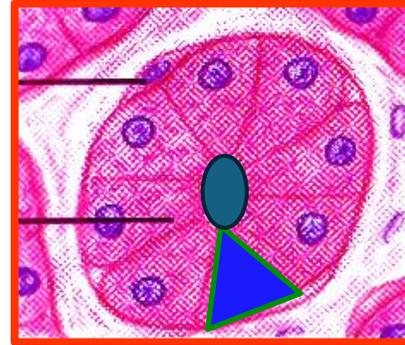
Serous acini are **small spherical** in shape that surrounded by BM, composed of many pyramidal cells encircling **narrow** lumen.

## Serous cells:

The **pyramidal** cells that encircling the narrow lumen are termed serous cells.

## Staining:

Serous acini are **dark stained basophilic structure**.



# Serous saliva

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## Definition:

Serous saliva is **watery** secretion comes from serous acini.

## Composition:

Serous saliva is composed mainly of **enzymes**.

## Functions:

1. Serous saliva is related to oral **digestion of food**.
2. Protective action against microorganisms.

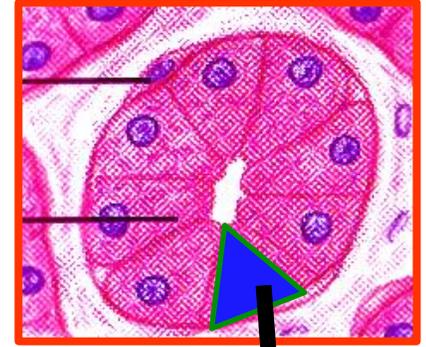
# Serous cells

## Light Microscopic appearance:

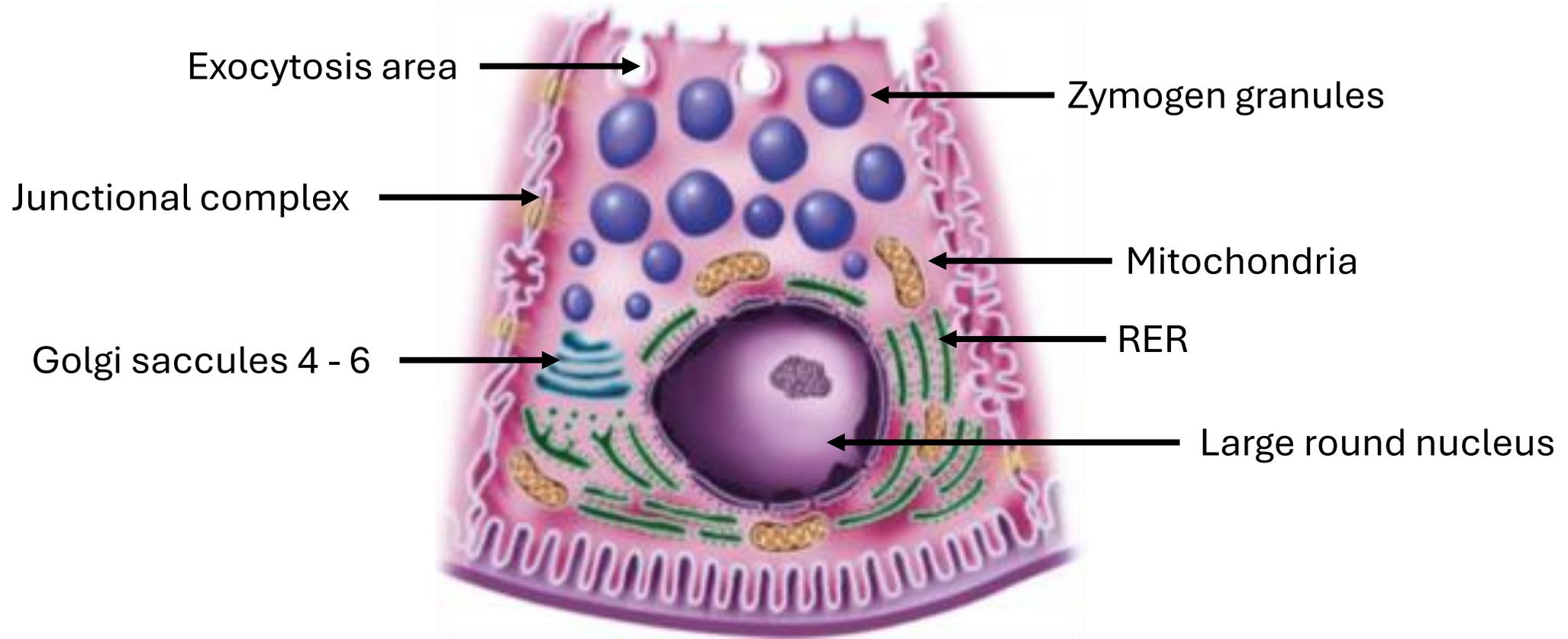
- Serous cells are pyramidal cells with basophilic cytoplasm and contain round nucleus located basally.
- The apical cytoplasm of the cells is filled with many small serous granules termed **Zymogen granules**.
- Apical part of the cells is the part that facing the lumen of the acini.

## Electron Microscopic appearance:

- Mitochondria, Rough endoplasmic reticulum (RER) and ribosomes.
- Golgi apparatus (**4-6 saccules**).
- Lysosomes.
- The cells are attached together by junctional complexes preventing the escapement of saliva.



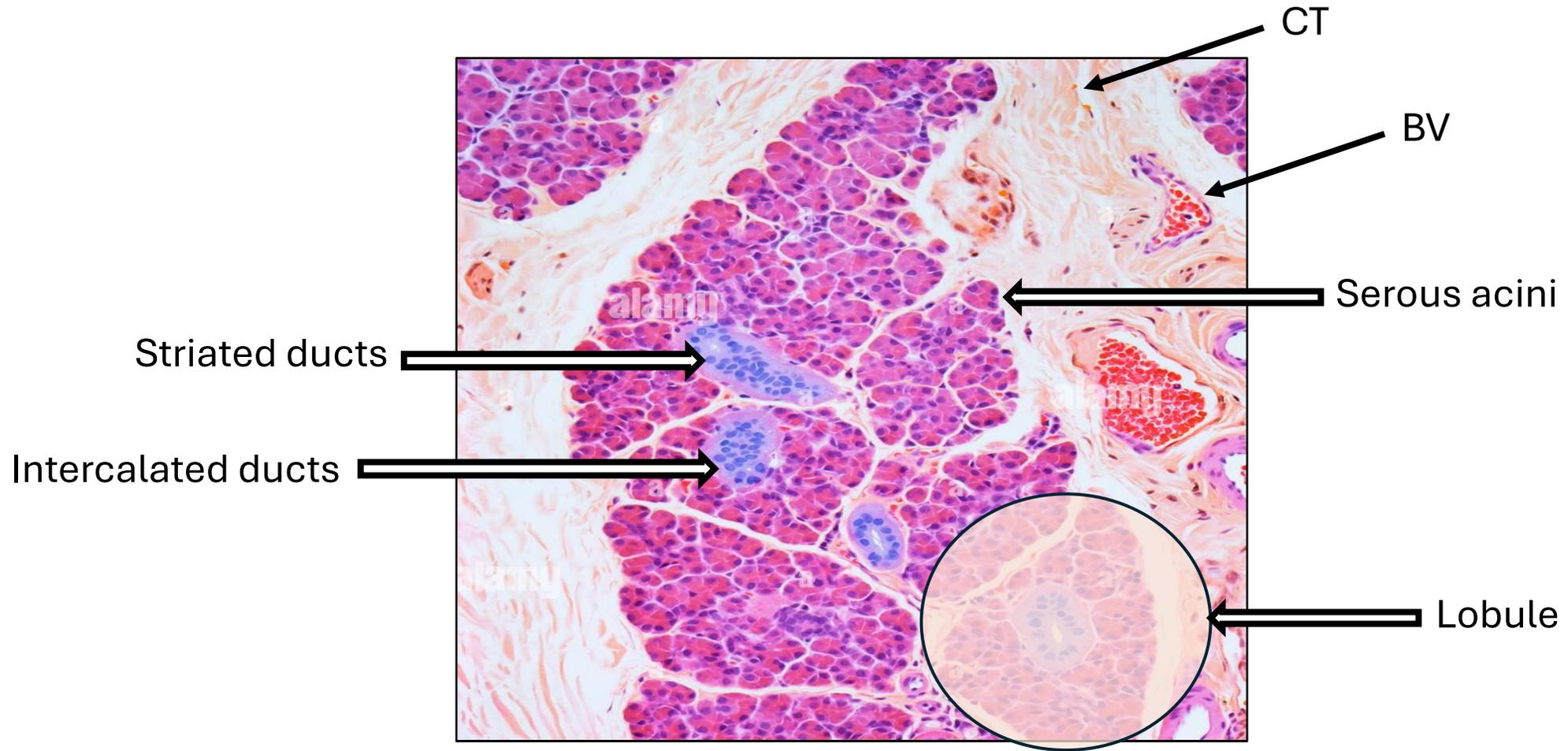
↓ Apical part



↑ Basal part

# Section in serous salivary gland

## Parotid gland



# Mucous acini

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## Definition:

Mucous acini are the unit structure of the parenchymal elements of mucous gland.

## Composition:

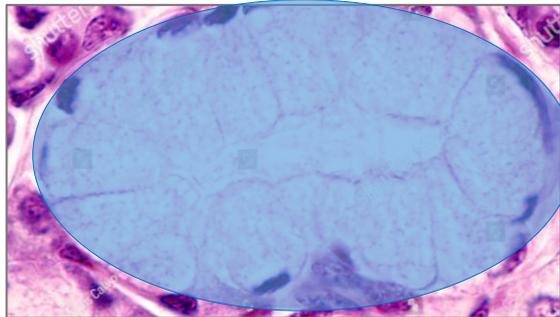
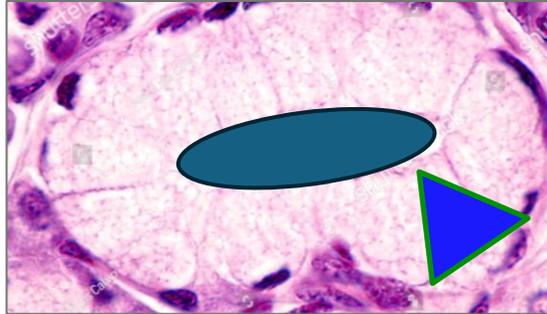
Mucous acini are **large tubular** in shape that surrounded by BM, composed of many **short pyramidal** cells encircling **wide** lumen.

## Mucous cells:

The **short pyramidal** cells that encircling the wide lumen are termed mucous cells.

## Staining:

Mucous acini are **light-stained eosinophilic** structure.



# Mucous saliva

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## Definition:

Mucous saliva is **viscus** secretion comes from mucous acini.

## Compositon:

Mucous saliva is composed mainly of **glycoproteins**.

## Functions:

1. Mucous saliva is related to **lubrication** of the oral cavity and nasopharynx.
2. Protective action against trauma and heat.
3. Protective action against microorganisms.

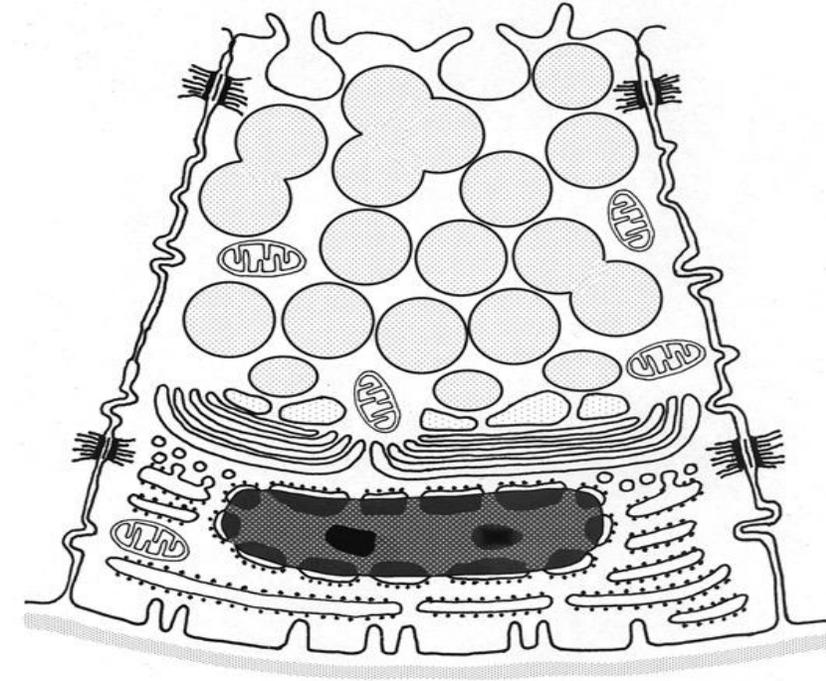
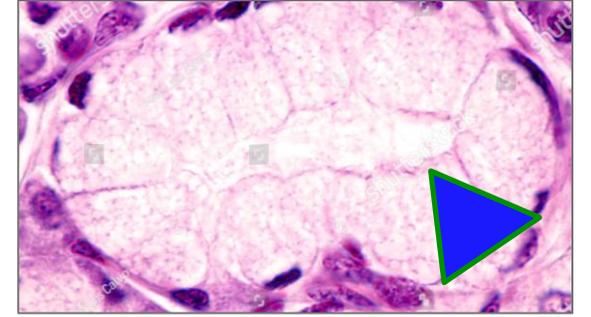
# Mucous cells

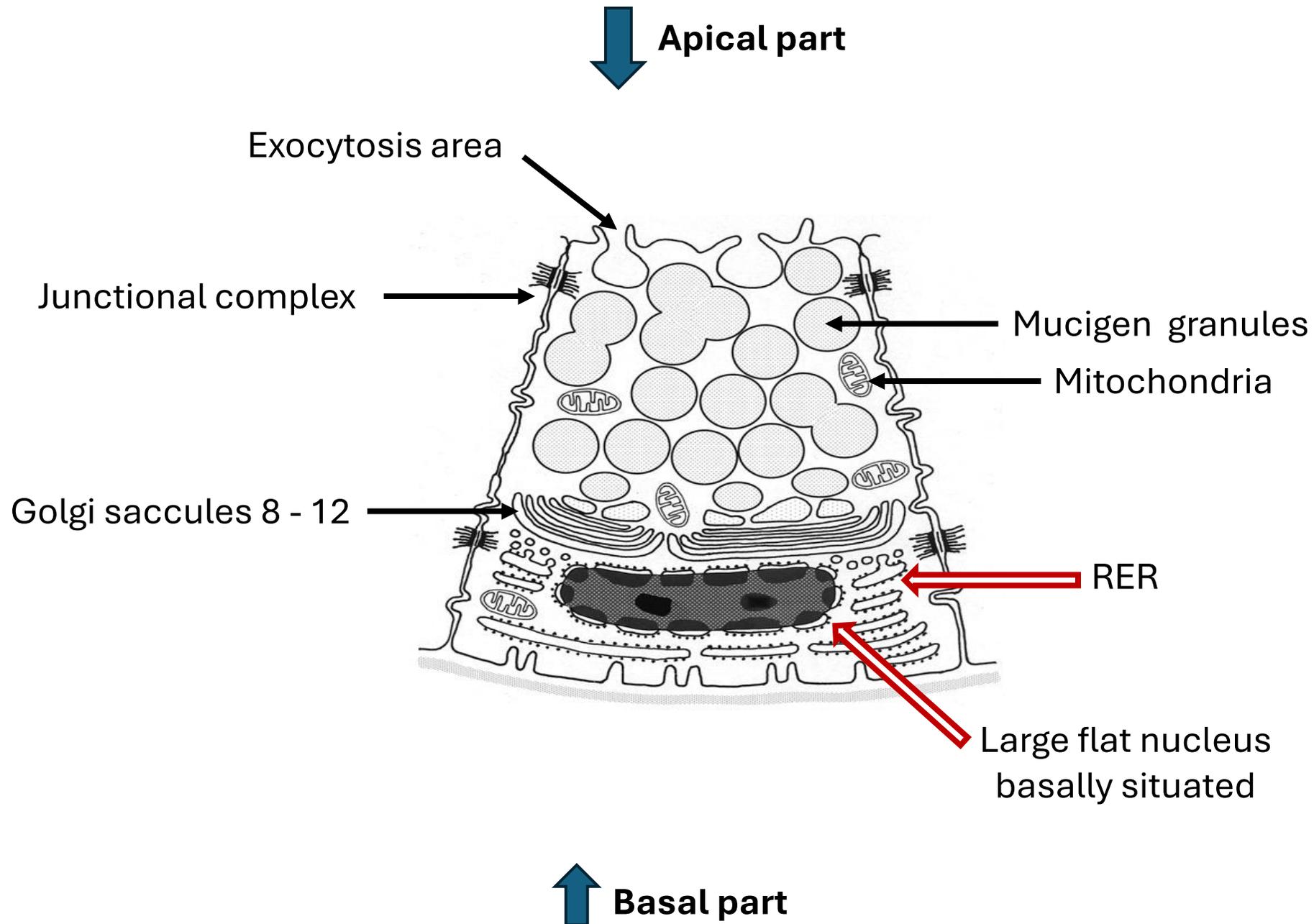
## Light Microscopic appearance:

- Mucous cells are short pyramidal cells with **eosinophilic** cytoplasm and contain **large flat nucleus** located basally.
- The apical cytoplasm of the cells is filled with many large mucous granules termed **Mucigen granules**.

## Electron Microscopic appearance:

- Mitochondria, Rough endoplasmic reticulum (RER) and ribosomes.
- Golgi apparatus (**8 - 12 saccules**).
- Lysosomes.
- The cells are attached together by junctional complexes preventing the escapement of saliva.

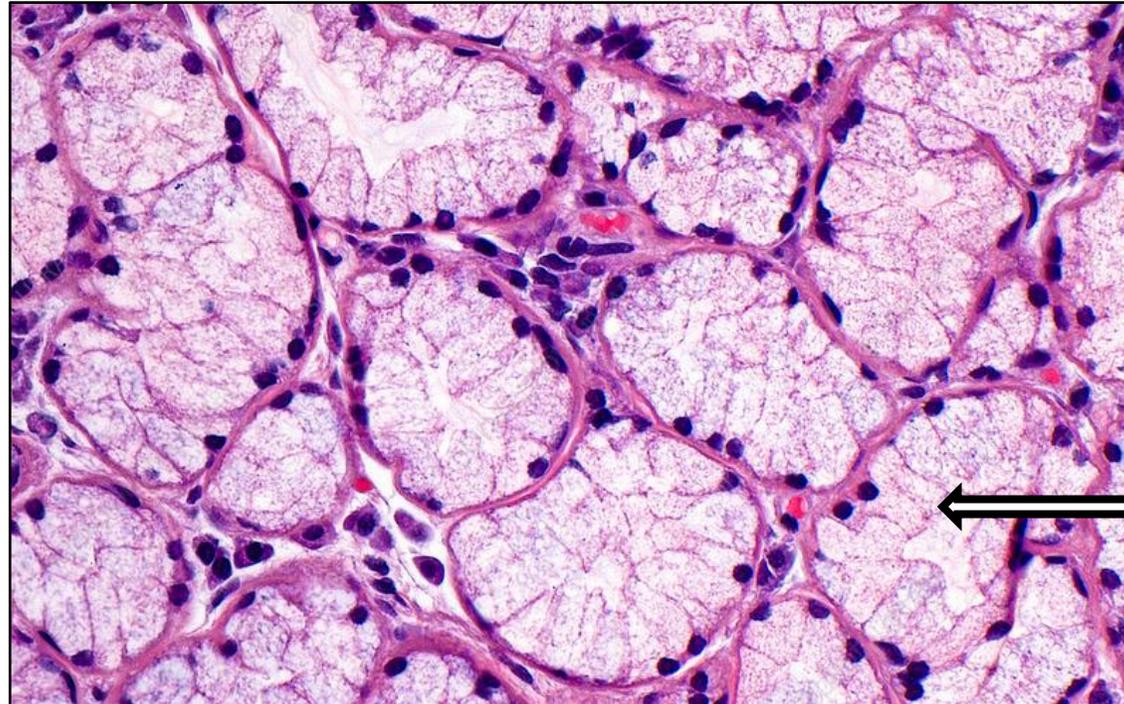




# Section in mucous salivary gland

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## Sublingual gland



← Mucous  
acini

# Mixed acini and mixed salivary glands

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## Definition of mixed acini:

Mixed acini are composed mainly of **large tubular mucous acini** and capped from one side by **few serous cells termed serous demilune**.

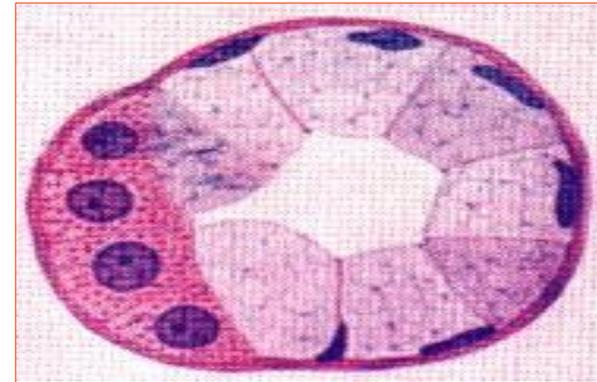
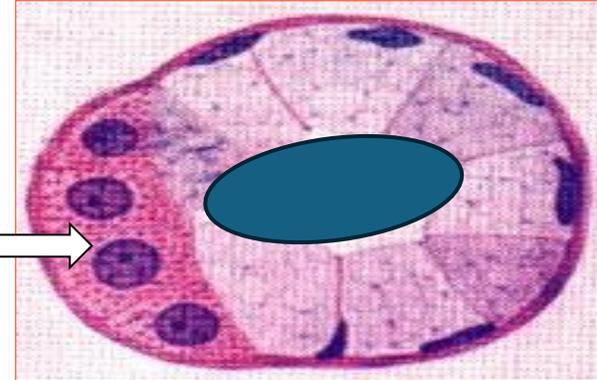
## Terminology of serous demilune:

- ❑ Demilune of Von Ebner.
- ❑ Crescent of Giannozzi.

## Mixed salivary gland are composed of :

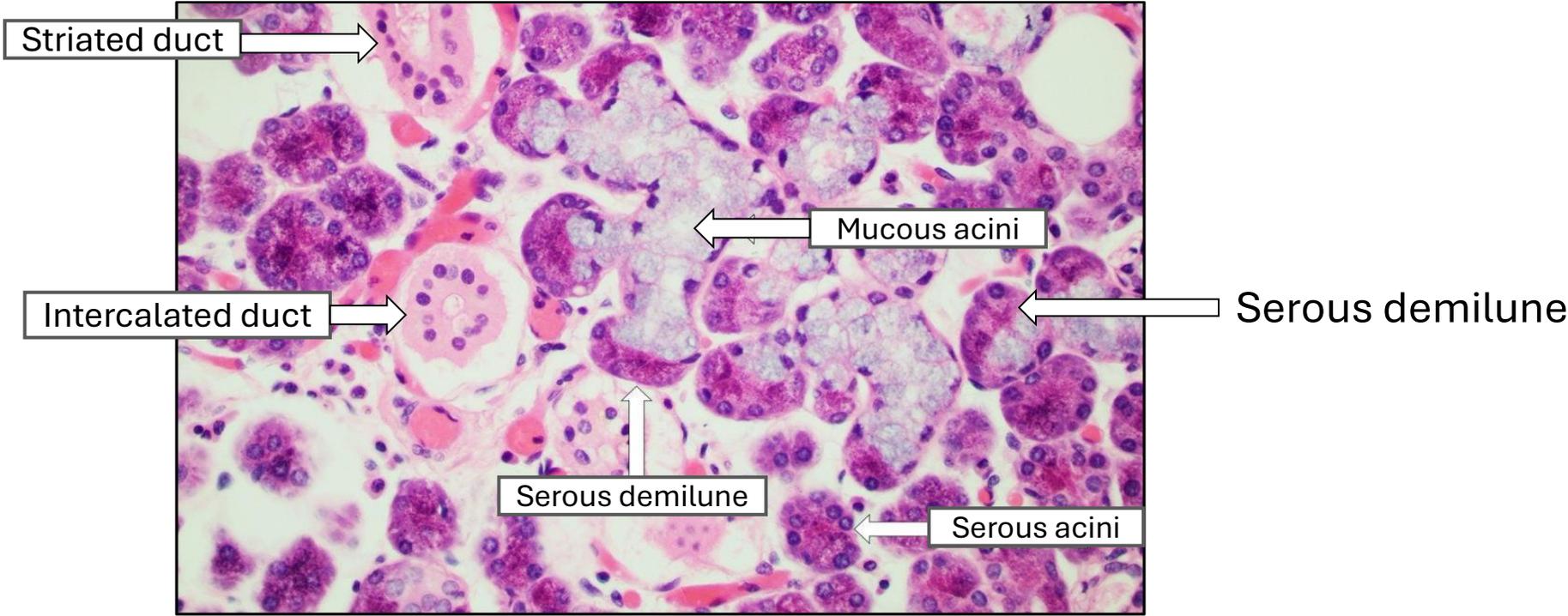
1. Mixed acini.
2. Sometimes, sections of mixed gland contain separate mucous acini and separate serous acini.

Serous demilune



# Section in mixed salivary gland

## Submandibular gland



# Myoepithelial cells

## Definition:

Myoepithelial Cells are spindle-shaped cell that encircle both acini and intercalated duct.

## Site:

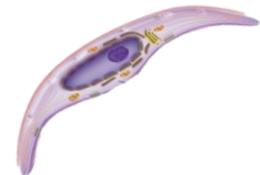
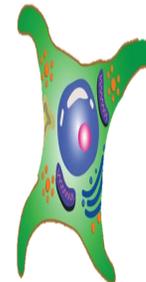
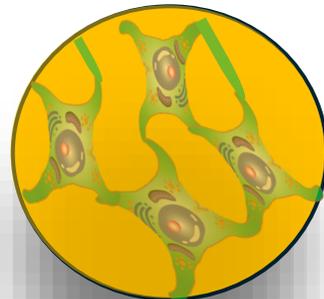
Myoepithelial Cells are located between acinar cells and acinar basement membrane.

## Structure:

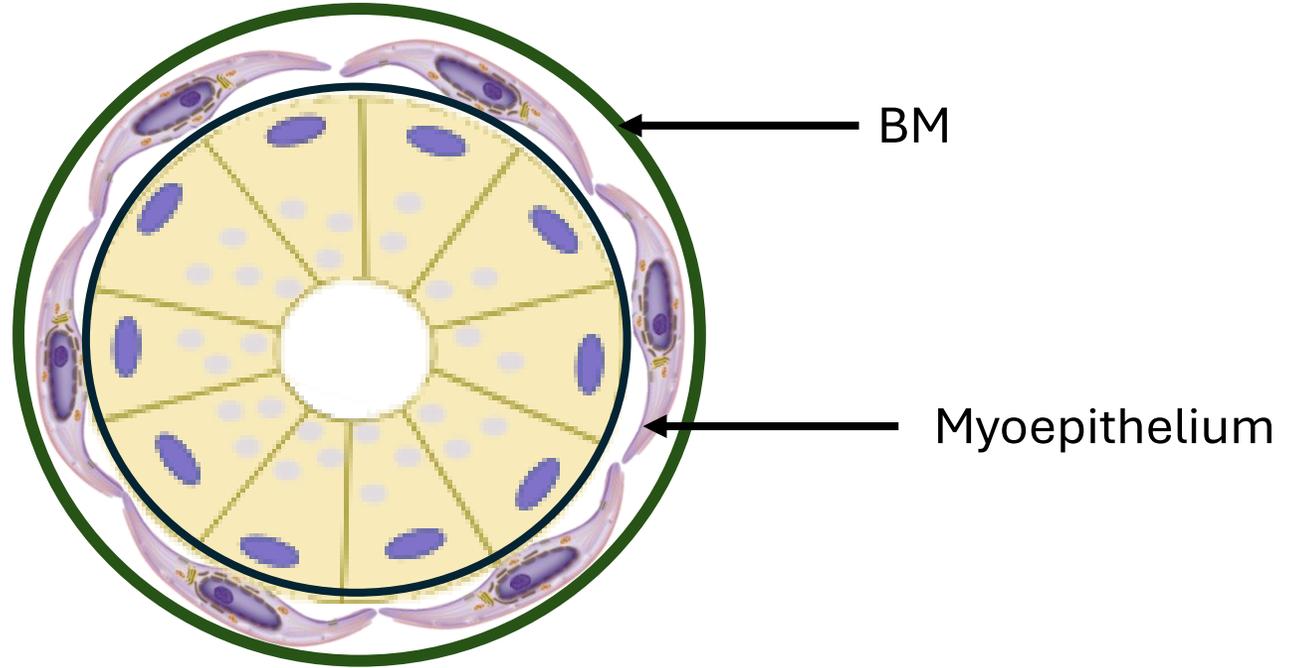
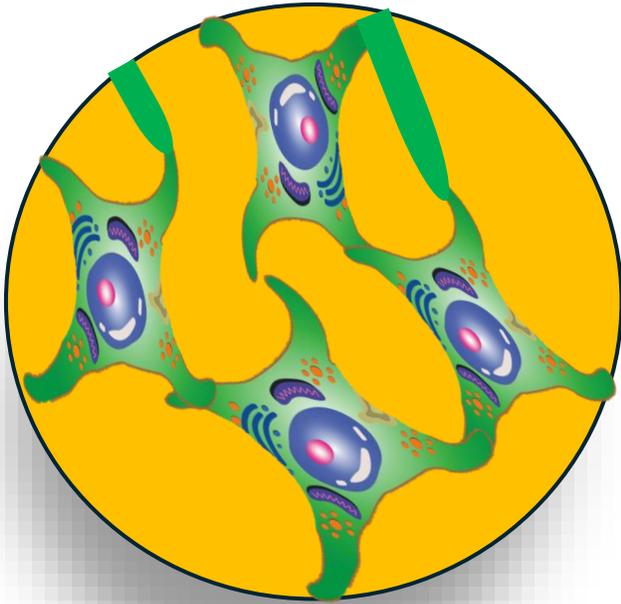
- Myoepithelial Cells are branched cells attached to each other forming a network resemble a basket net.
- The cells contain both actin and myosin filaments as **in the muscle cells**.

## Function:

Myoepithelial cells have a contractile function to squeeze the acini for pushing the saliva into the ducts.



# Myoepithelial cells





**Welcome**