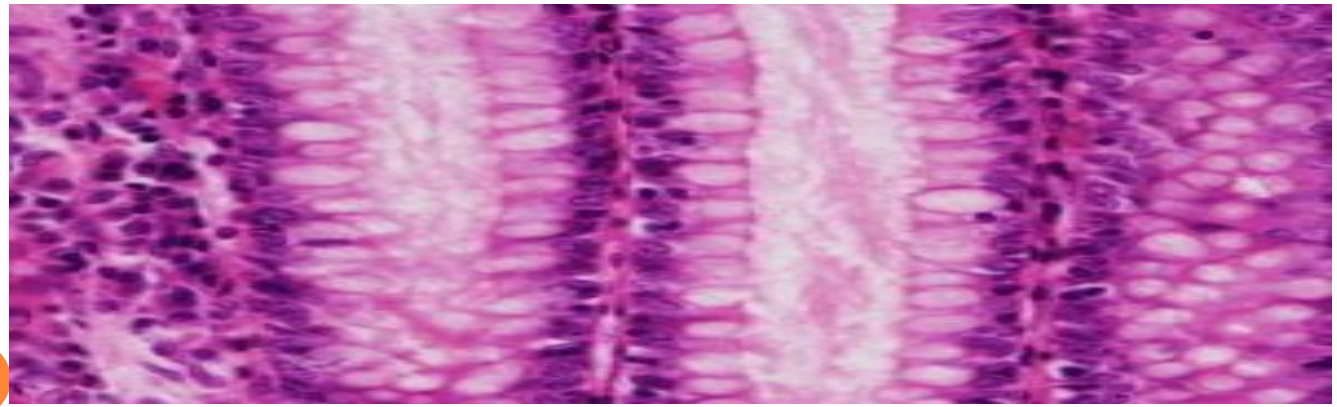
LAB 9

HISTOLOGY



DR. MARYAM M. HUSSAIN
PH.D. BIOLOGY

D- Glandular epithelial tissues

Glands: Are composed of masses of epithelial cells, these cells are highly specialized for secretion

Glands are divided into two major groups based on the method of distribution of their secretory products:-

1- Exocrine gland: Passes its secretion within a duct.

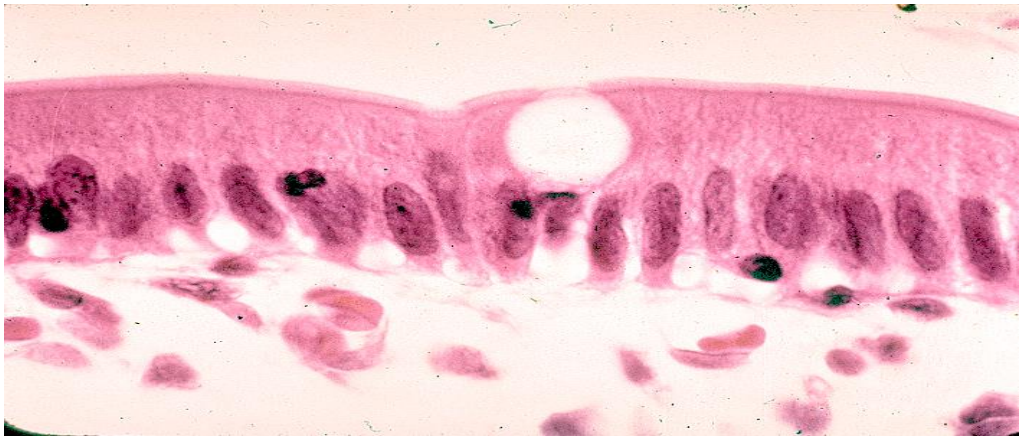
2- Endocrine gland: passes its secretion to blood or lymph.

Ex: Hypothalamus and thyroid gland

There is another group:-Mixed glands having both endocrine and exocrine function. **Ex:** The pancreas.

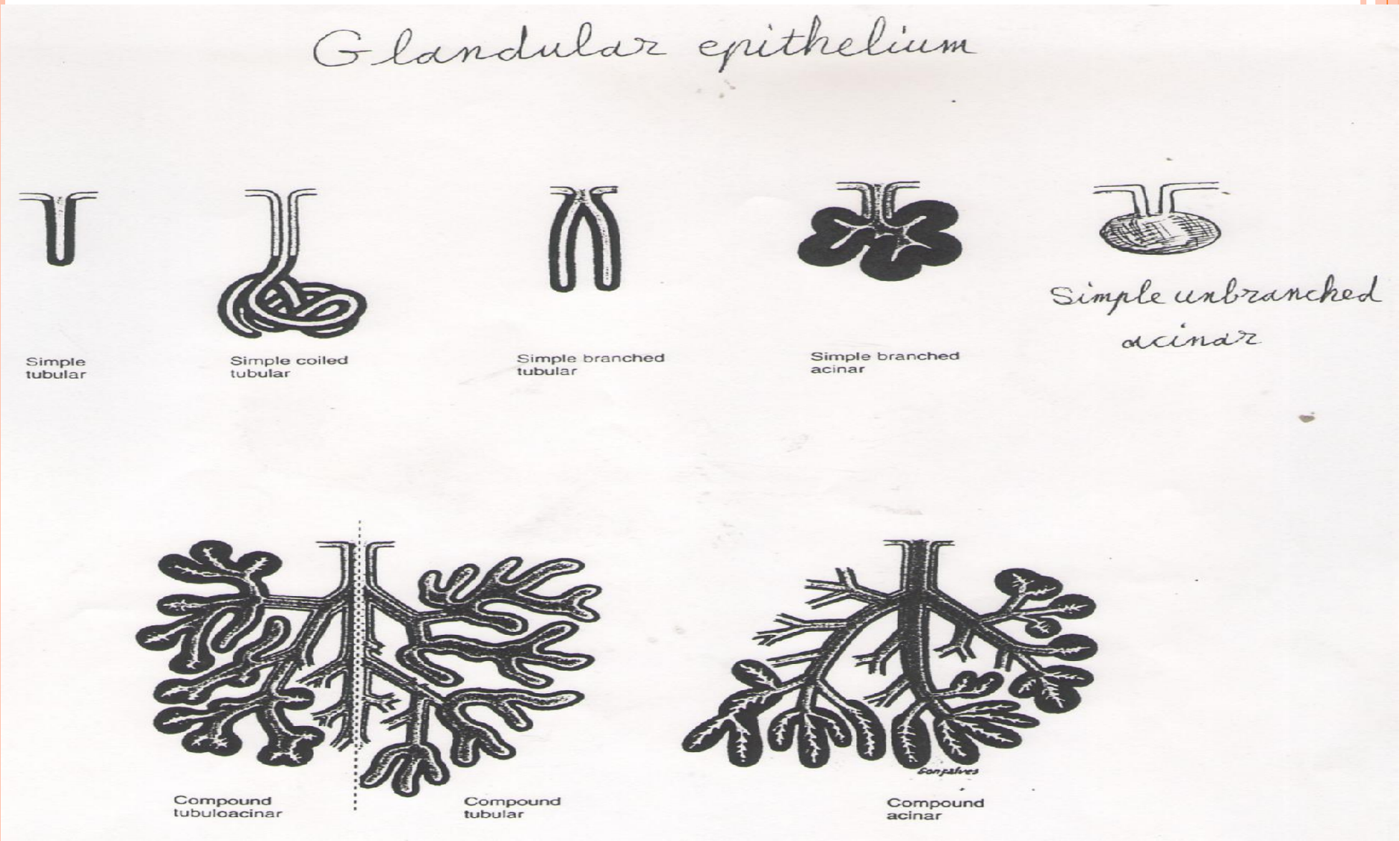
- **Exocrine** gland is classified according to the number of cells into:

A- Unicellular glands: **Ex:** Goblet cells which secrete the mucous in the small intestine or trachea.



Goblet cell

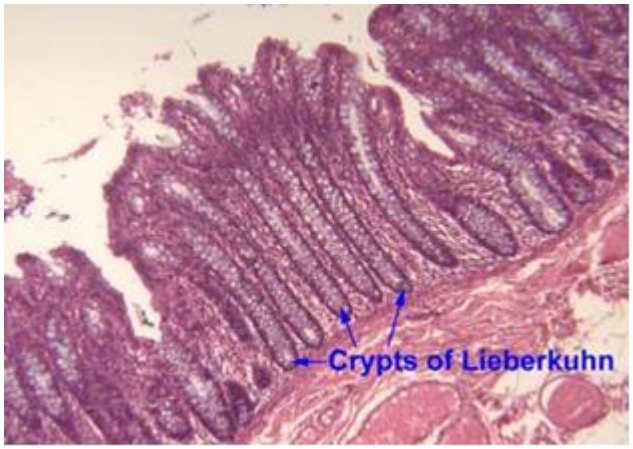
B- Multicellular glands: Are classified according to the branching or unbranching the duct in to:-

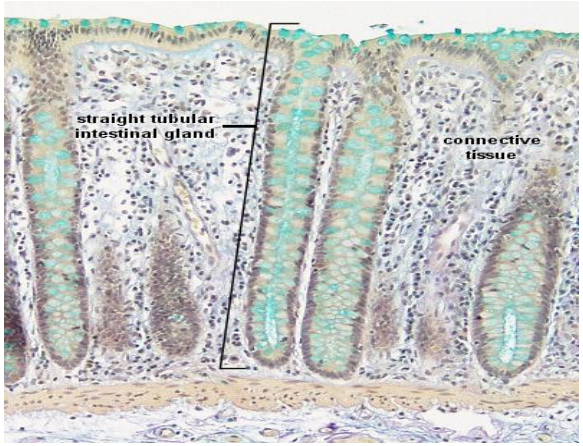


Types of exocrine glands (multicellular)

1- Simple glands: Their ducts do not branched, and divided according to the morphology of their secretory units:

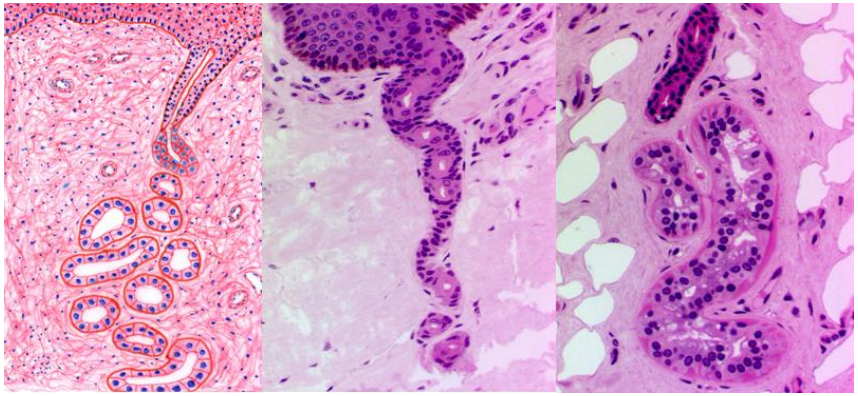
- Tubular: These are also divided into:-
- Straight tubular gland. **Ex:** Crypts of lieberkuhn in the large intestine





Straight tubular gland

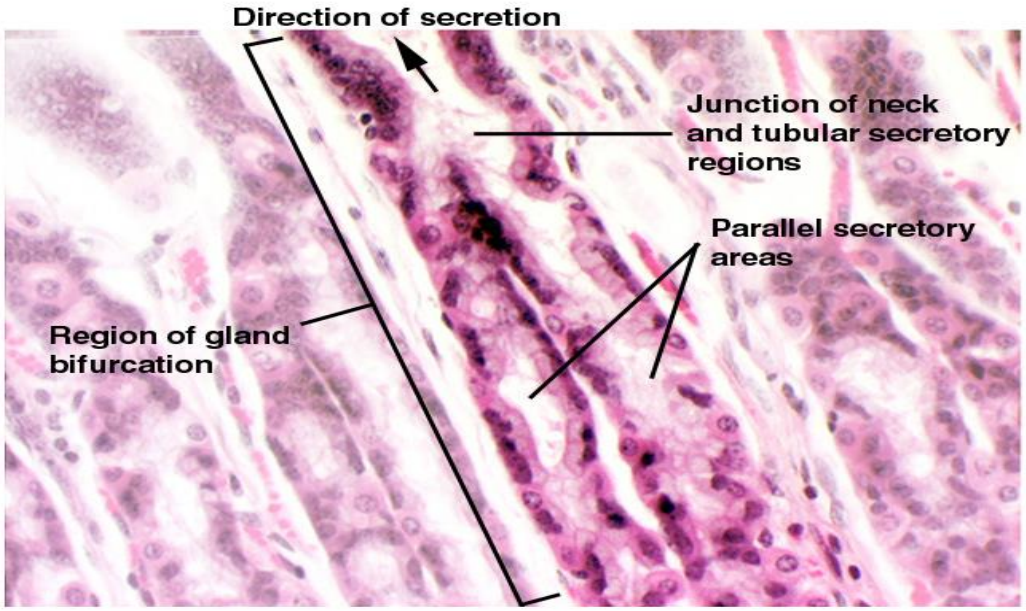
- Coiled tubular gland. **Ex:** Sweat gland in the skin.



Coiled tubular gland

- Branched tubular gland: The ending region of secretory unit is branched.

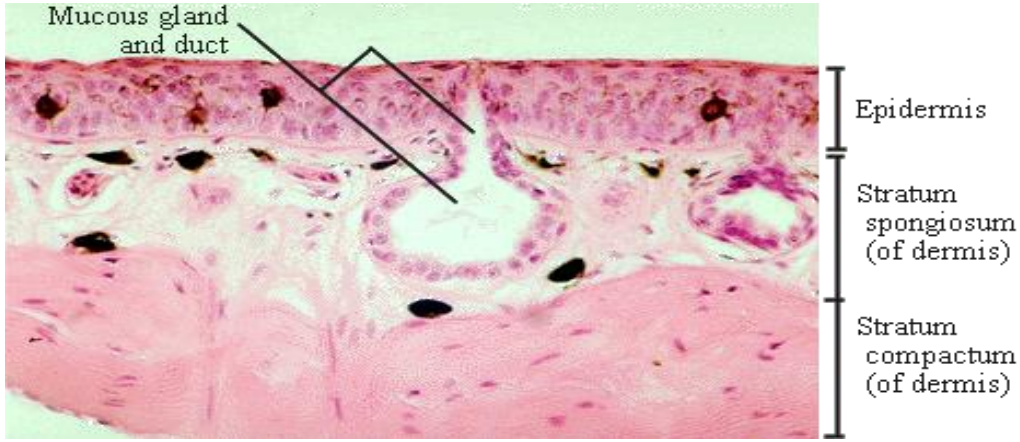
Ex: Pyloric glands in the pyloric portion of stomach.



Branched tubular gland

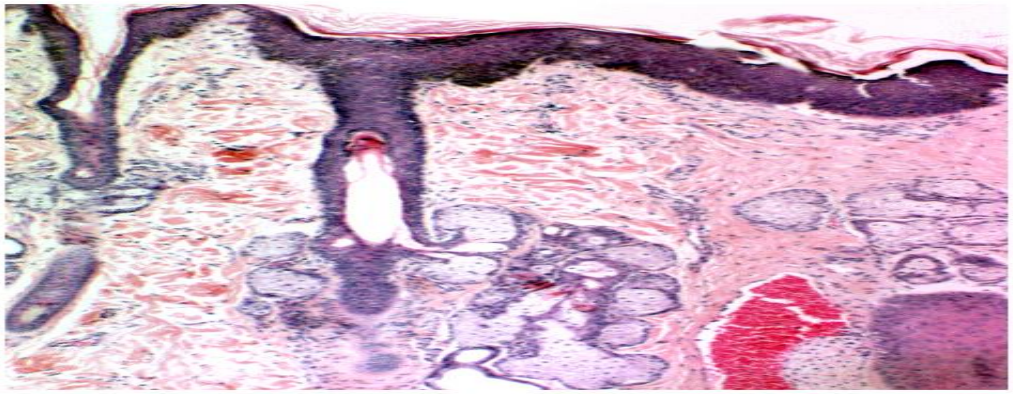
* Alveolar or acinar glands: Divided into:

1.Unbranched alveolar or acinar gland. **Ex:** Poisonous and mucous glands in frog skin.



Unbranched alveolar gland

2.Branched alveolar gland. **Ex:** Sebaceous gland in the skin.



Branched acinar gland

2- Compound glands: Their ducts are branched, so the gland consists of lobules each one represent simple branched gland. And they are categorized according to the morphology of their secretory units:

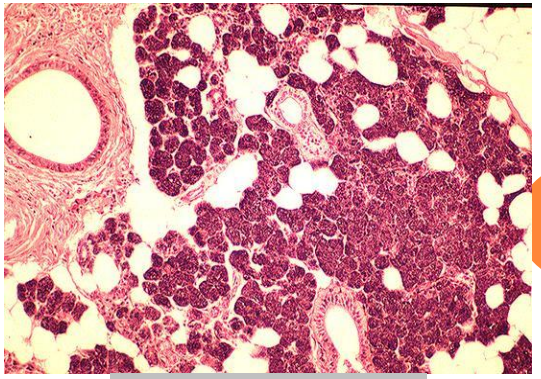
* Compound tubular gland. **Ex:** Kidney and testis.

* Compound alveolar or acinar gland. **Ex:** Lactic (mammary) glands.

Compound acinar gland c. s.

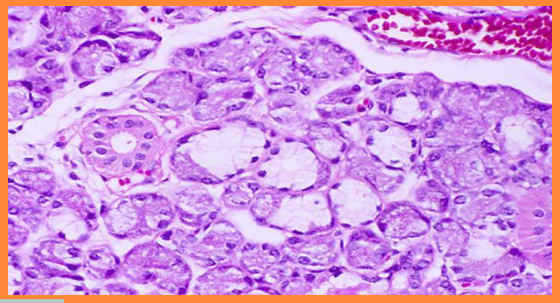
* Compound tubuloacinar or tubuloalveolar gland.

Ex: Salivary gland and lacrimal gland.

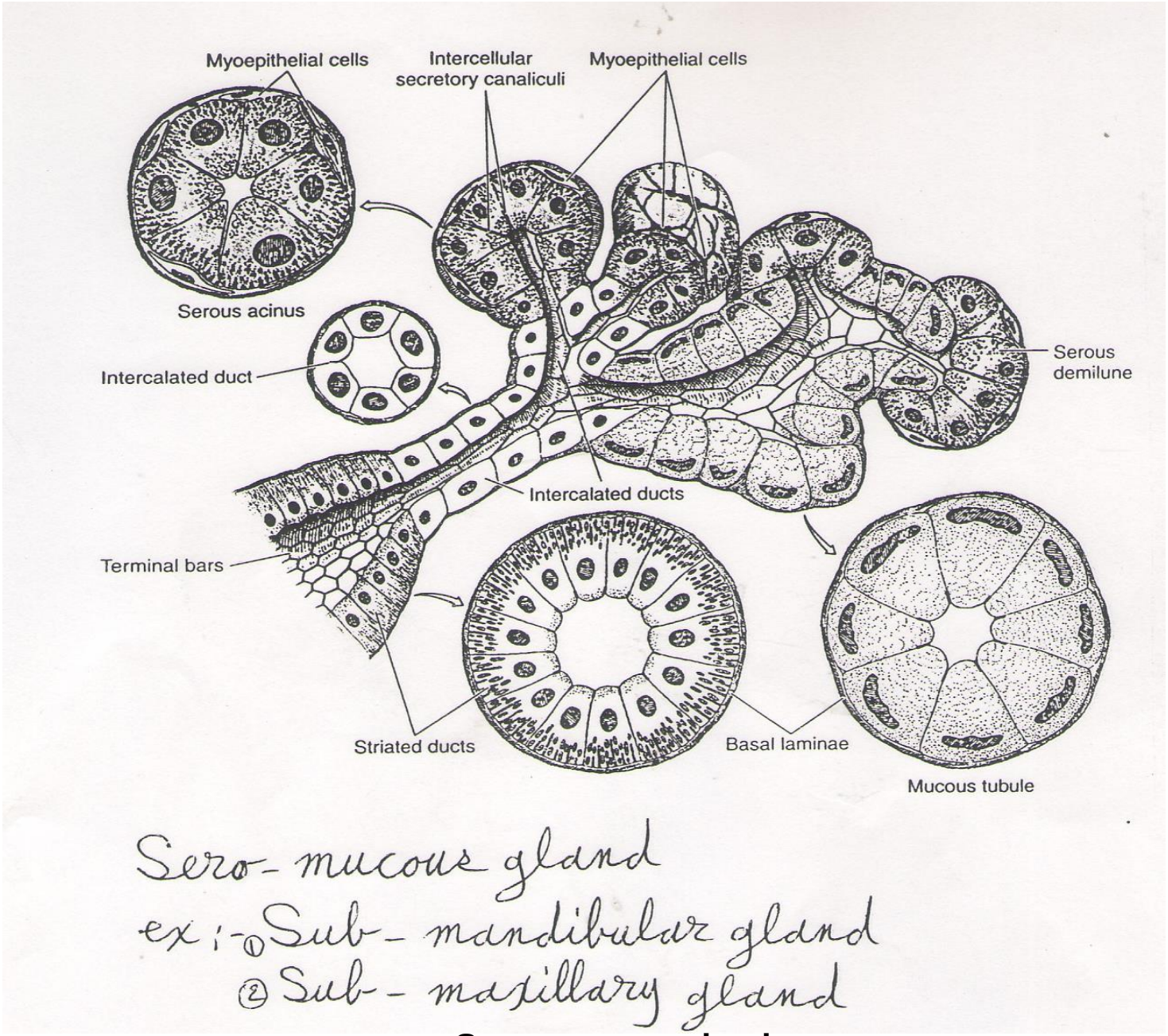

Compound tubuloacinar gland

EXOCRINE GLANDS ALSO CLASSIFIED ACCORDING TO THE NATURE OF SECRETION TO:

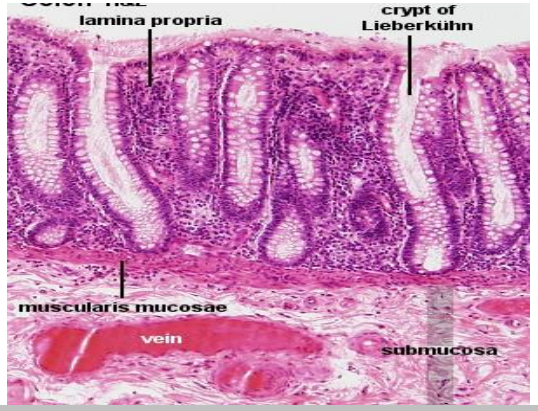
1- serous glands	2- mucous glands	3- Sero-mucous glands (mixed gland)
1. secretory unit are dark stained	secretory unit are light stained	We will see serous and mucous secretory units contains mucous cells and serous cells aggregated in the end of the unit called demilune
2. The cells are pyramidal and arranged around very small lumen.	the cells are large pyramidal and arranged around large lumen.	
3. The nuclei of the cells are spherical in the basal region.	The nuclei of the cells are flattened in the basal region.	
5. The secretion granules are stained.	The secretion granules are not stained.	
6. Ex: Parotid gland.	Ex: Palatine gland	Ex: Sub-mandibular gland or sub-maxillary gland and the glands in the trachea.



Sero-mucous gland

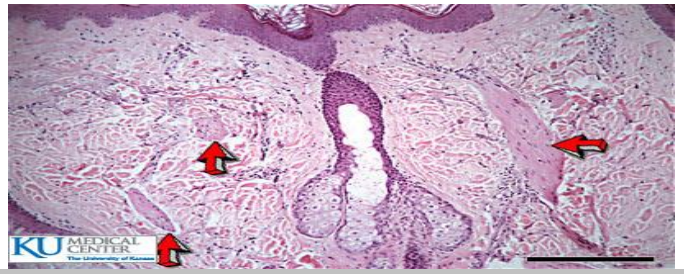


Sero-mucous gland

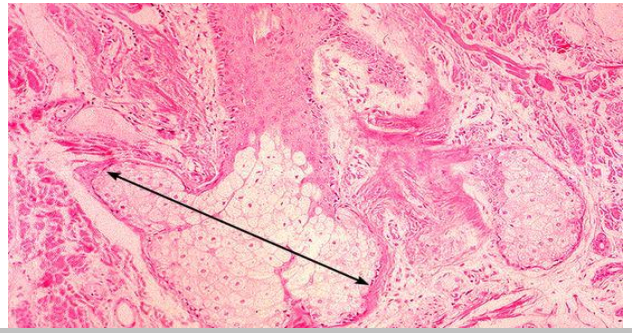


Straight tubular (simple multicellular exocrine) gland

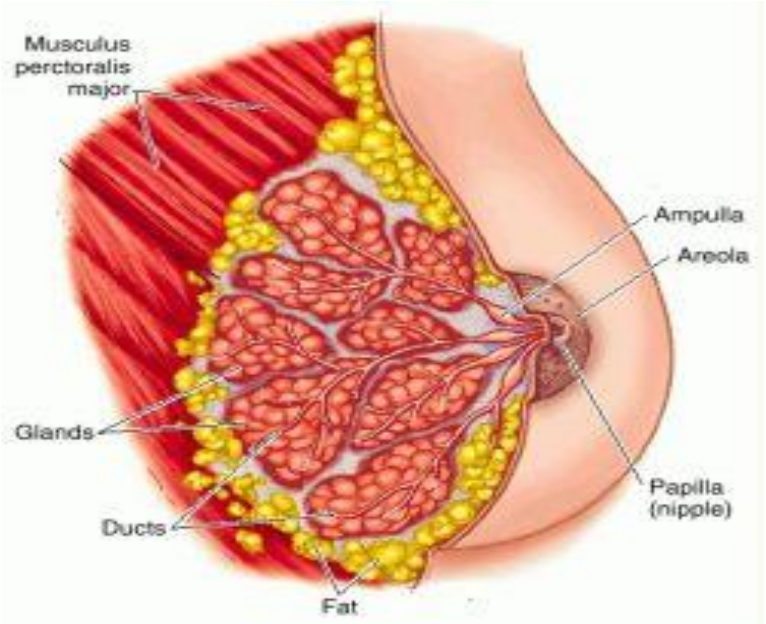
Branched tubular (simple multicellular exocrine) gland



Branched acinar(simple multicellular exocrine) gland



Branched acinar (simple multicellular exocrine) gland



Compound alveolar (multicellular exocrine) gland