Glandular Epithelium

Glandular Epithelium

- Glandular epithelium is the structure which has the secretory function
- 2 types -exocrine gland & endocrine glands

Glandular Epithelium

Classification of glandular epithelium

I. Exocrine gland

1. According to number of cells
2. According to the nature of their secretion
3. According to mode of secretion
4. According to shape of the secretory unit
5. According to duct system

II. Endocrine gland

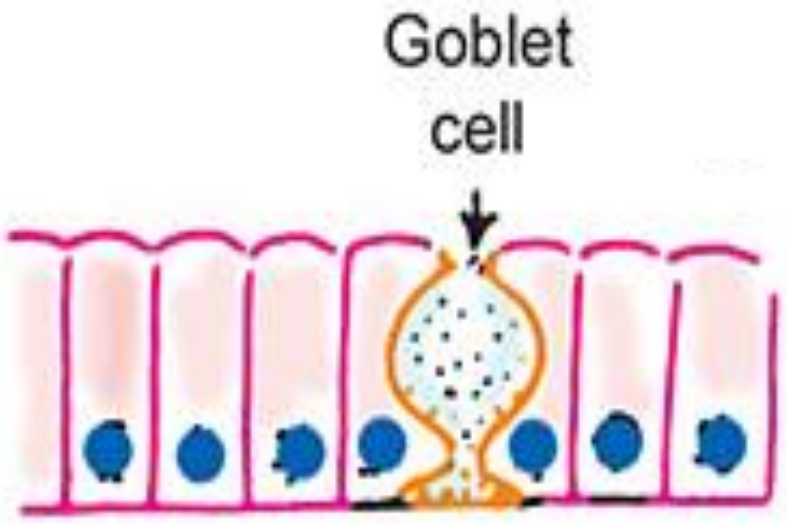
Classification of Exocrine Glands

1. According to number of cells

Unicellular

A gland may consist of single cell

E.g. Goblet cells



Multicellular

Composed of more than one cell.

E.g. Most of the glands in the body



2. According to the nature of the secretion

Serous



E.g. parotid gland

Secrete clear, watery fluid containing enzymes

Secretory acini are

- smaller in size
- smaller lumen
- surrounded by serous secreting cells

Mucous



E.g. sublingual salivary gland

Secrete a thick, viscid material called mucin

Secretory acini are

- larger in size
- larger lumen
- surrounded by mucous secreting cells

2. According to the nature of the secretion

Serous



E.g. parotid gland

Mucous



E.g. sublingual salivary gland

Serous secreting cells

- triangular in shape with apices directed towards the lumen
- Nuclei are round near the base of the cells

Mucous secreting cells

- cuboidal in shape
- Nuclei are fattened at the base of the cells

2. According to the nature of the secretion

Serous



E.g. parotid gland

Mucous



E.g. sublingual salivary gland

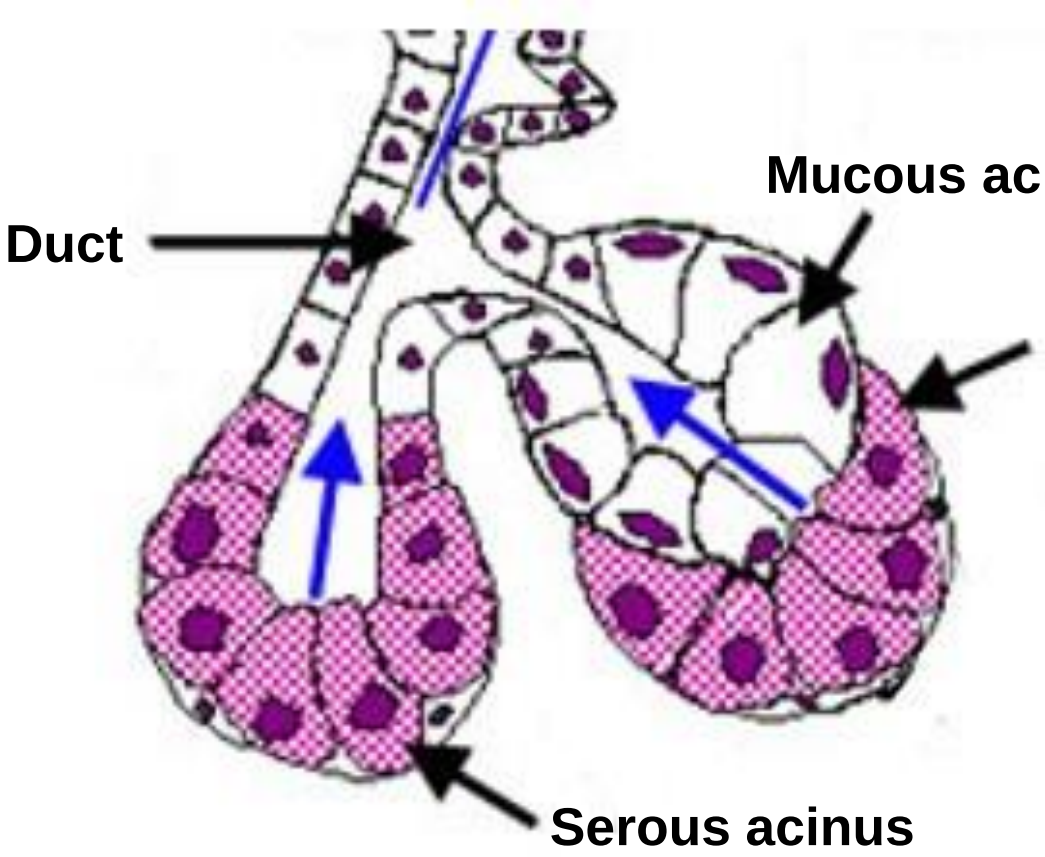
Serous secreting cells

- Cytoplasm between the nucleus & base is deeply basophilic due to (+) of RNA
- Cytoplasm between the nucleus & apex is acidophilic due to zymogen granules

Mucous secreting cells

- Cytoplasm
  - vacuolated appearance & basophilic
  - Because cytoplasm contains mucingin dissolved by alcohol during preparation
  - Cytoplasm between base & nucleus is not basophilic

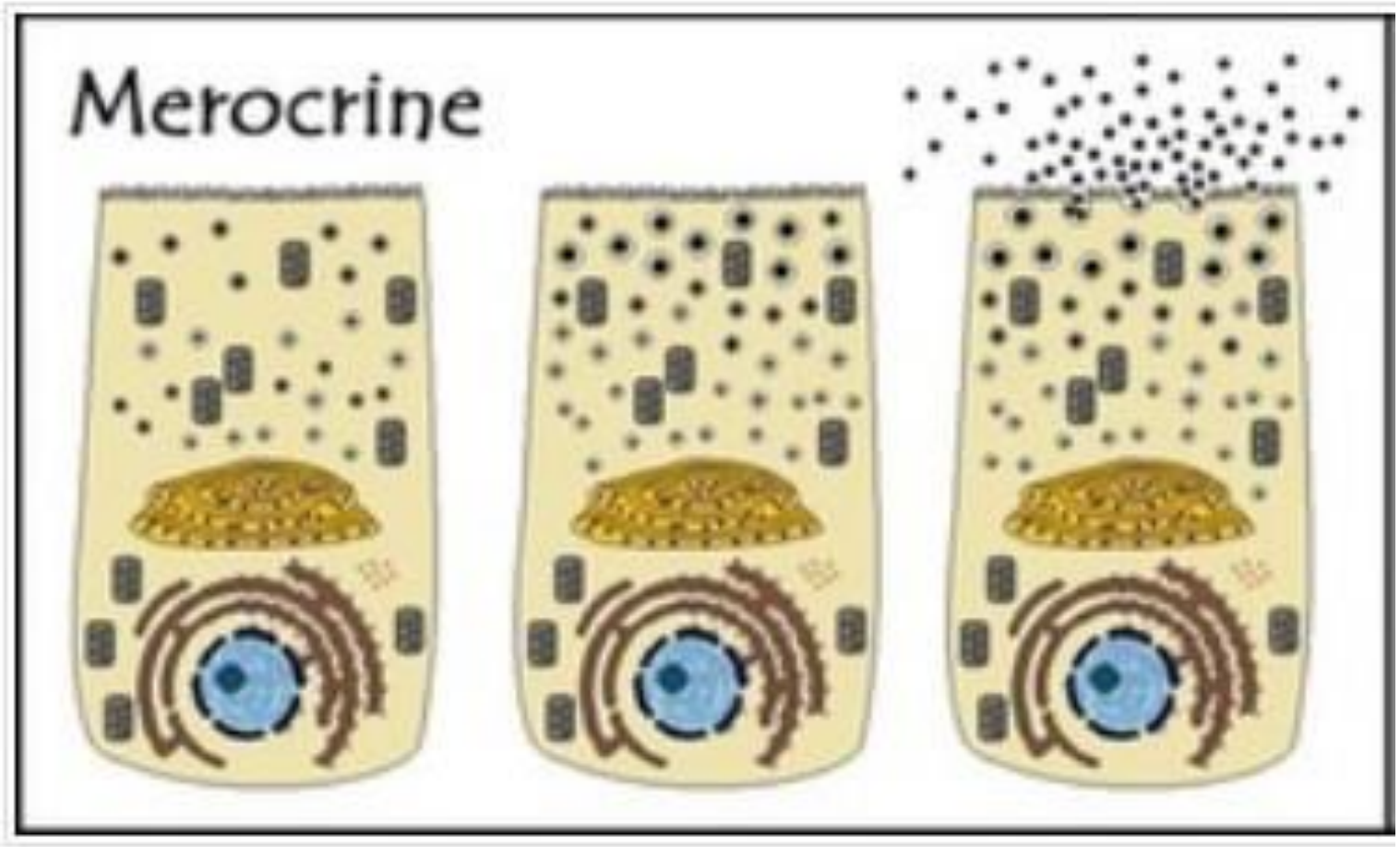
2. According to the nature of the secretion



Serous demilunes

- The serous acini appear as semi-lunar shaped structures which capped over the mucous acini

3. According to mode of secretion

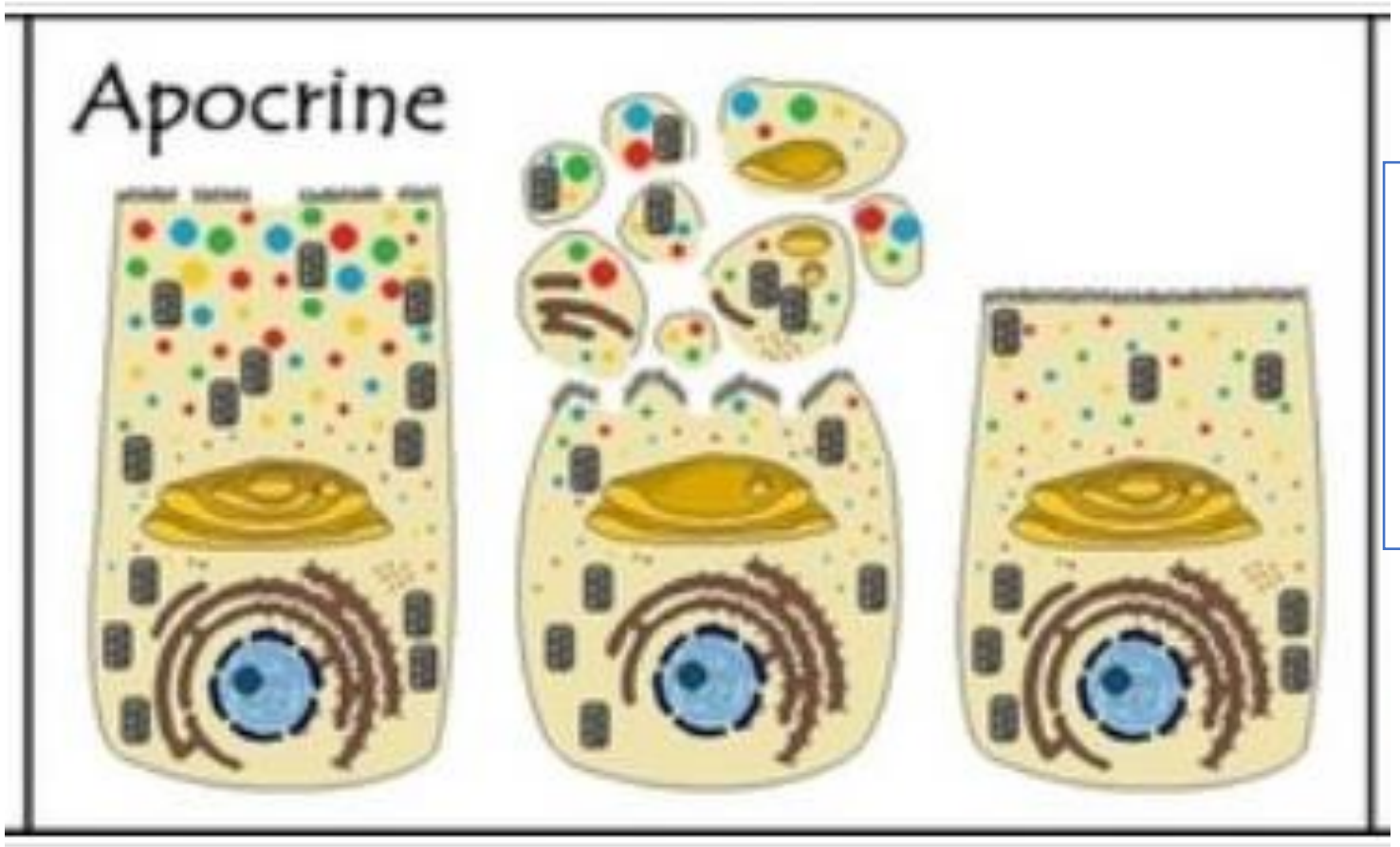


Merocrine

- **Only** secretion
- No cell loss

  E.g. Sweat gland

3. According to mode of secretion

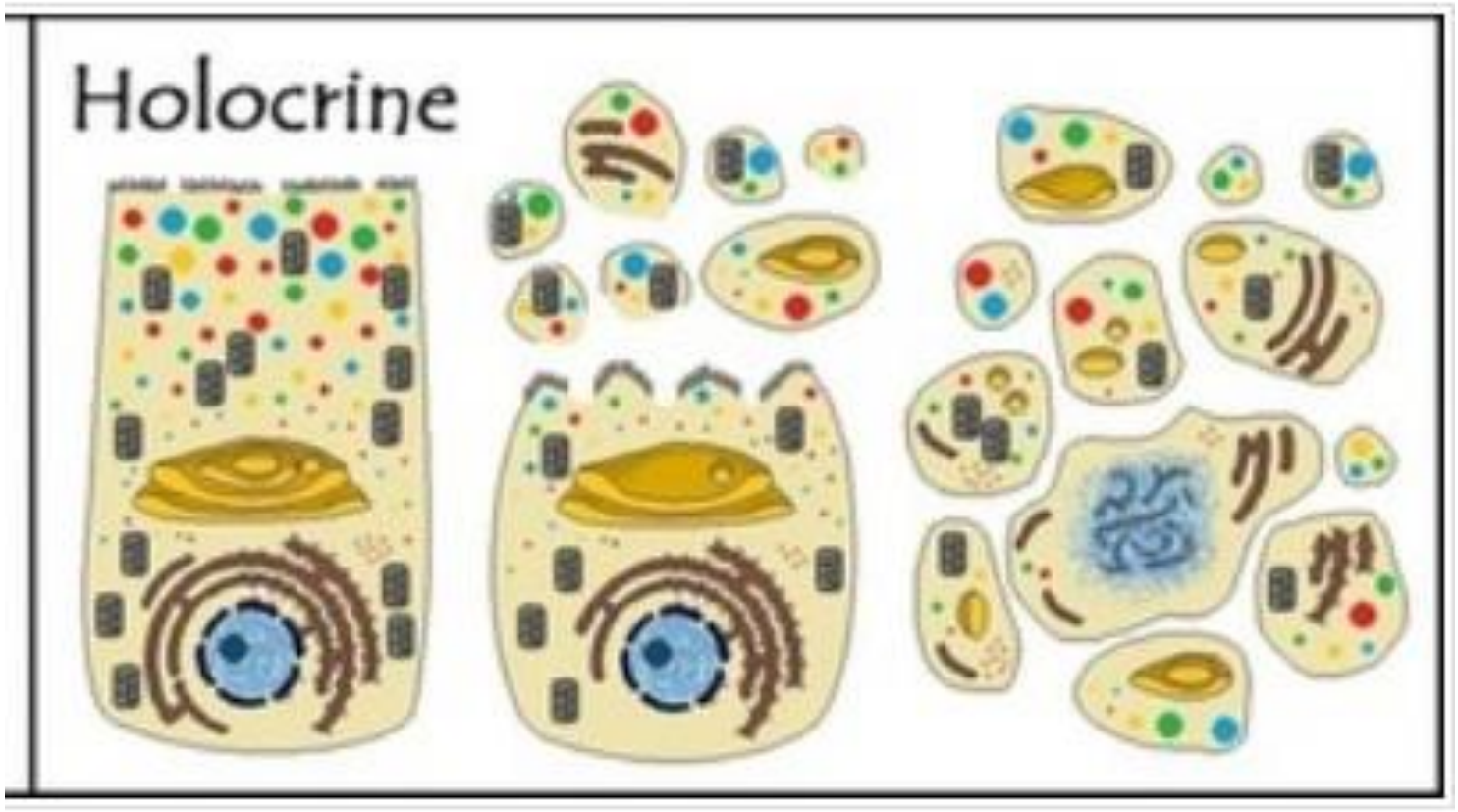


Apocrine

- Secretion &
- Loss of **a part** of cell

E.g. Apocrine sweat gland of axilla, Mammary gland

3. According to mode of secretion



Holocrine

- Secretion &
- Loss of **whole** of a cell

E.g. Sebaceous gland

4. According to shape of the secretory unit

Tubular



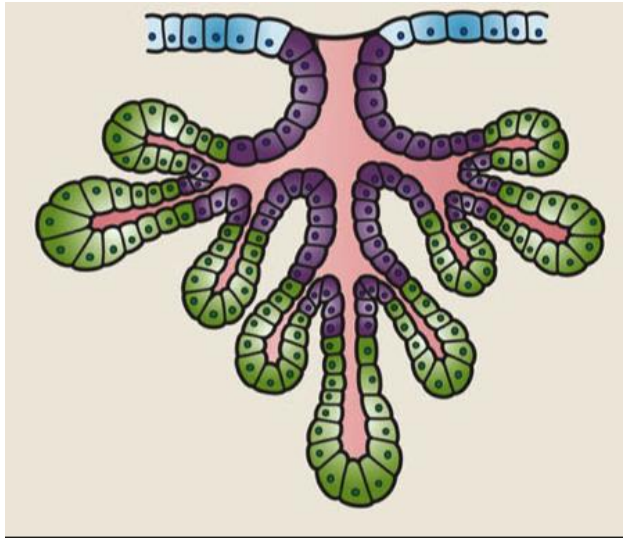
The secretory unit are tubular in shape

Acinar / Alveolar



The secretory unit are globular in shape

Tubulo-acinar / Tubulo-alveolar



The secretory unit may have both tubular & alveolar unit

5. According to duct system

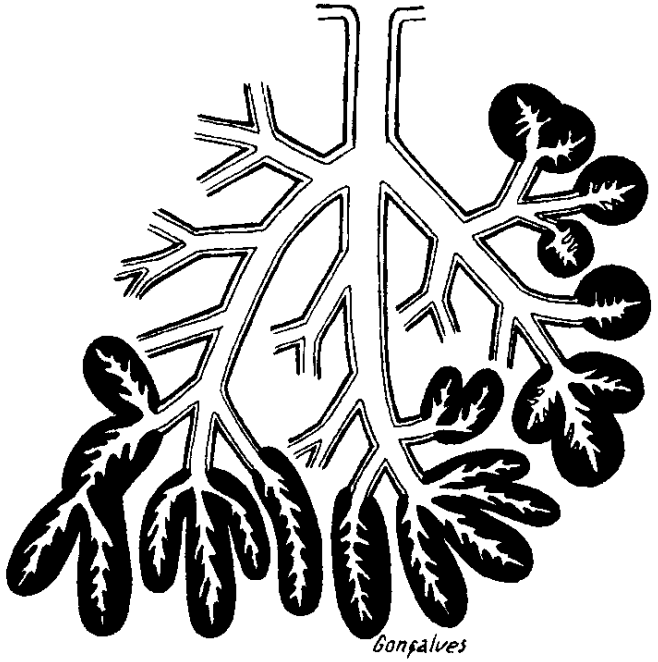
Simple





The duct system is **not branched**

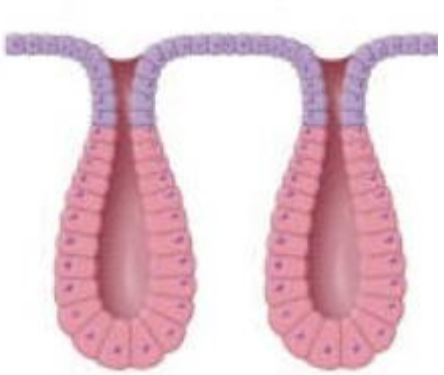
Compound



The duct system is **branched**

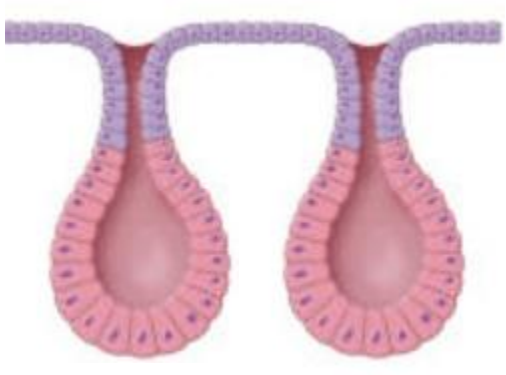
5. According to duct system

Simple Tubular



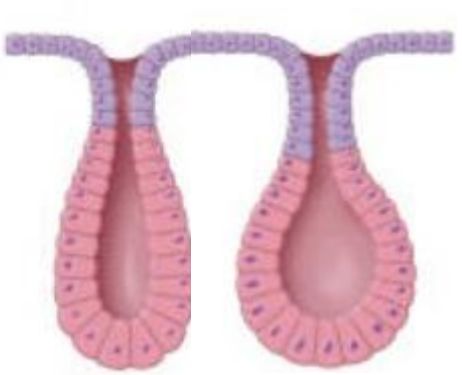
E.g. Intestinal crypts

Simple Alveolar



E.g. Sebaceous gland

Simple Tubulo-alveolar



E.g. Small salivary gland of oral cavity

5. According to duct system

Compound Tubular



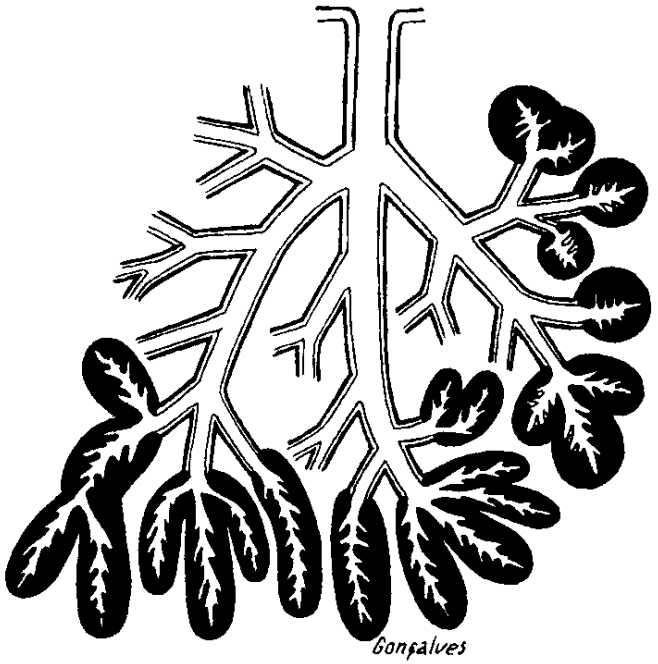
E.g. Kidney

Compound Alveolar



E.g. Mammary gland

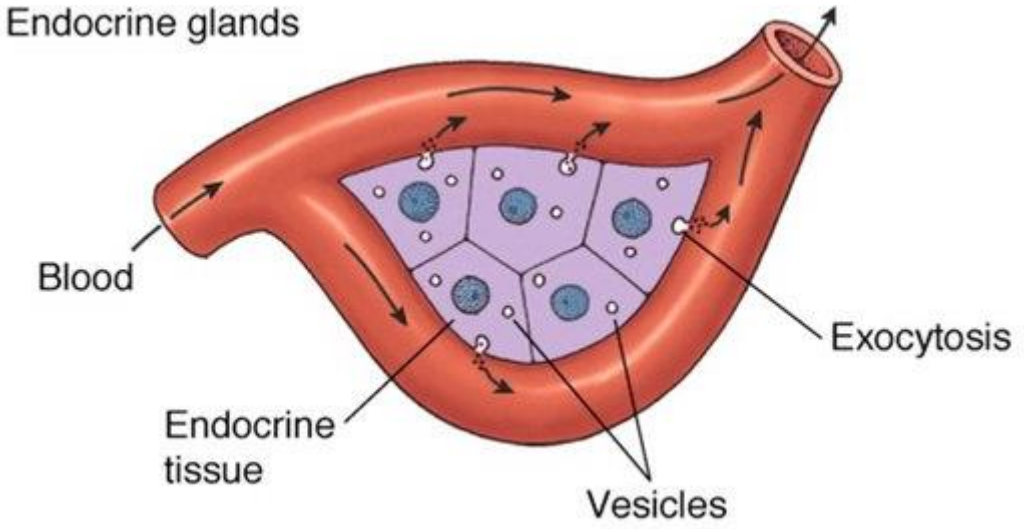
Compound Tubulo-alveolar



E.g. Pancreas

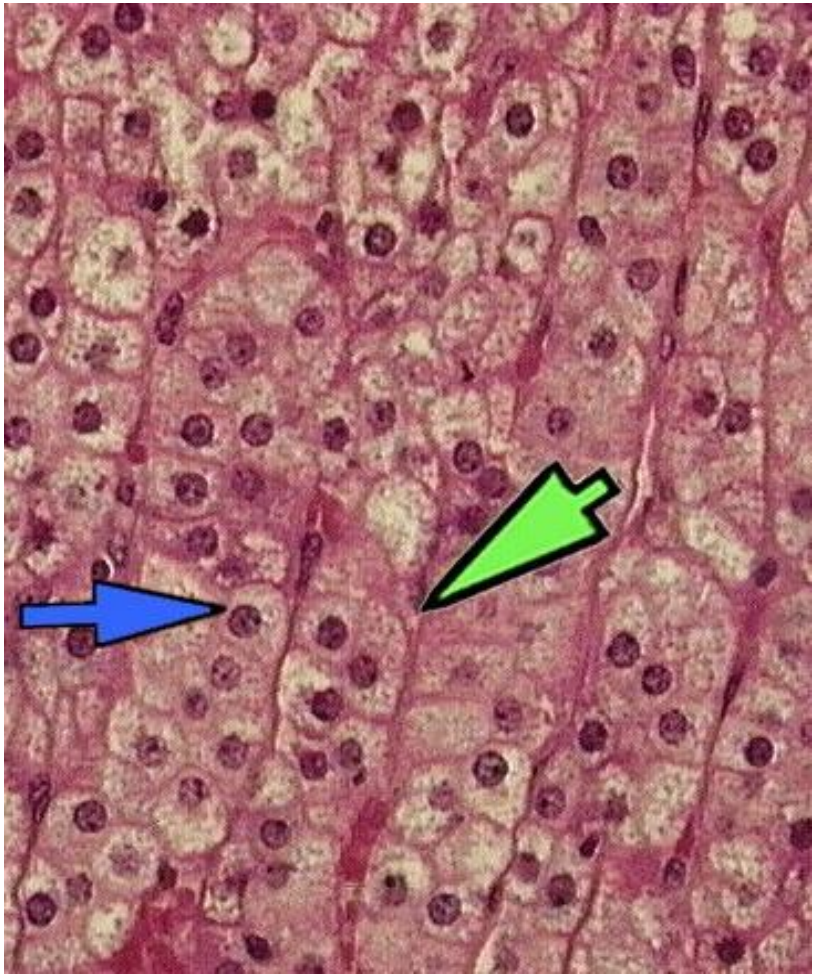
Endocrine Glands

- Endocrine glands have no ducts
- Their secretion is known as hormone
- Hormone is carried through the blood stream.
- Therefore, endocrine secretion influence the activities of another part of the body

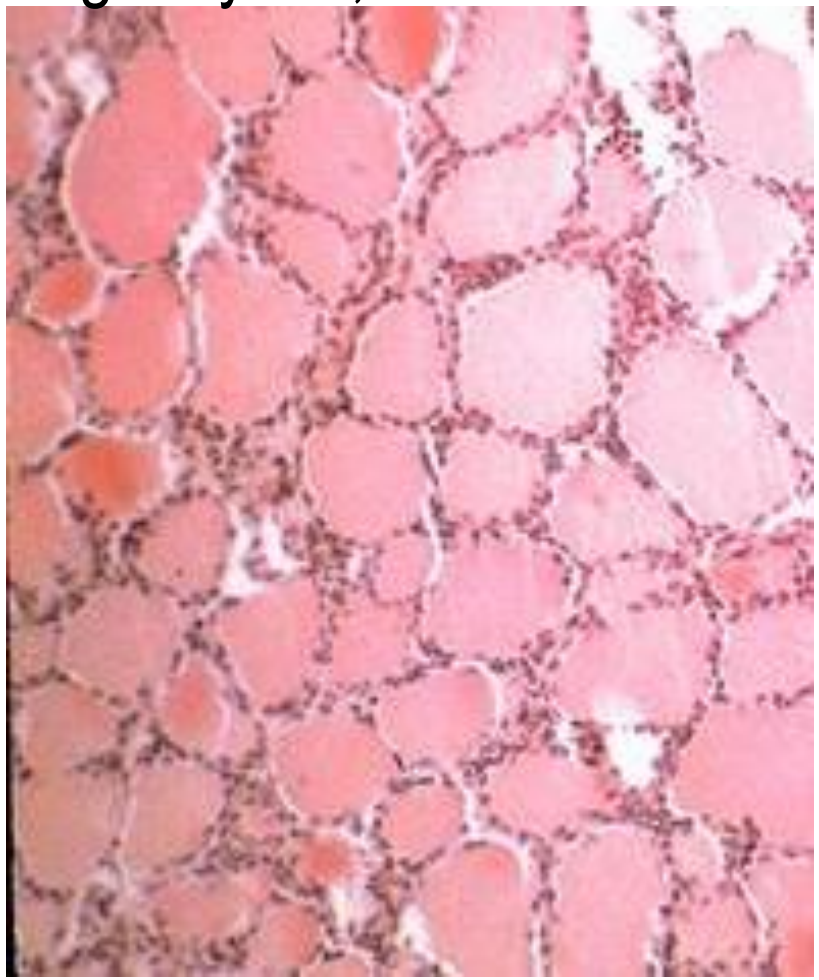


Endocrine Glands

Cords or plates
E.g. Suprarenal, parathyroid



Follicles
E.g. Thyroid, ovarian follicle



Clusters
E.g. Islet cells of pancreas

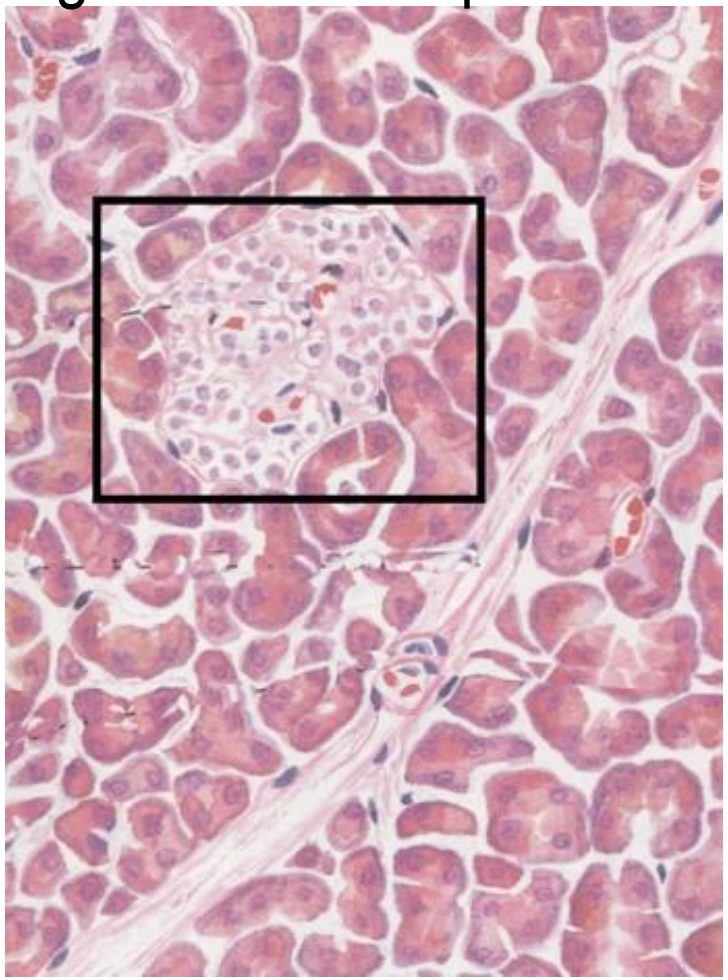


Figure-references

Di Fiore's atlas of histology with functional correlations

Eroschenko, V. P., & Fiore, M. S. H. (1996). *Di Fiore's atlas of histology with functional correlations*. Baltimore: Williams & Wilkins.

Websites

https://www.histology.leeds.ac.uk/oral/salivary.php

http://203.250.122.194/lecture/histology/htmht1/his06.htm

https://www.lecturio.com/concepts/glandular-epithelium/

https://slidetodoc.com/types-of-epithelia-glandular-epithelium-dr-katalin-gallatz/

https://www.toppr.com/ask/content/concept/hormones-and-endocrine-glands-in-humans-260679/

Text-references and More Readings

Handout for 2nd year B.Med.Tech, Anatomy

Di Fiore's atlas of histology with functional correlations

Eroschenko, V. P., & Fiore, M. S. H. (1996). *Di Fiore's atlas of histology with functional correlations*. Baltimore: Williams & Wilkins.

Thank you