Tongue and Salivary Glands

The Tongue

A muscular organ covered by mucus membrane.

Muscles inside the tongue form bundles separated by connective tissue continuous with that in the lamina propria.

The dorsal surface of the tongue is covered by epithelium that shows papilla.

The under surface of the tongue is covered by non-keratinized stratified squamous epithelium.

The sulcus terminalis marks the junction between the oral and pharyngeal parts of the tongue.

Sensations from the anterior 2/3 of the tongue are carried by the:

- lingual nerve: general sensations
- Chorda tympani: taste

All sensations from the posterior 1/3 of the tongue are carried by the glossopharyngeal nerve.

All muscles of the tongue receive motor innervation from the hypoglossal nerve except the palatoglossus

Types of lingual papilla

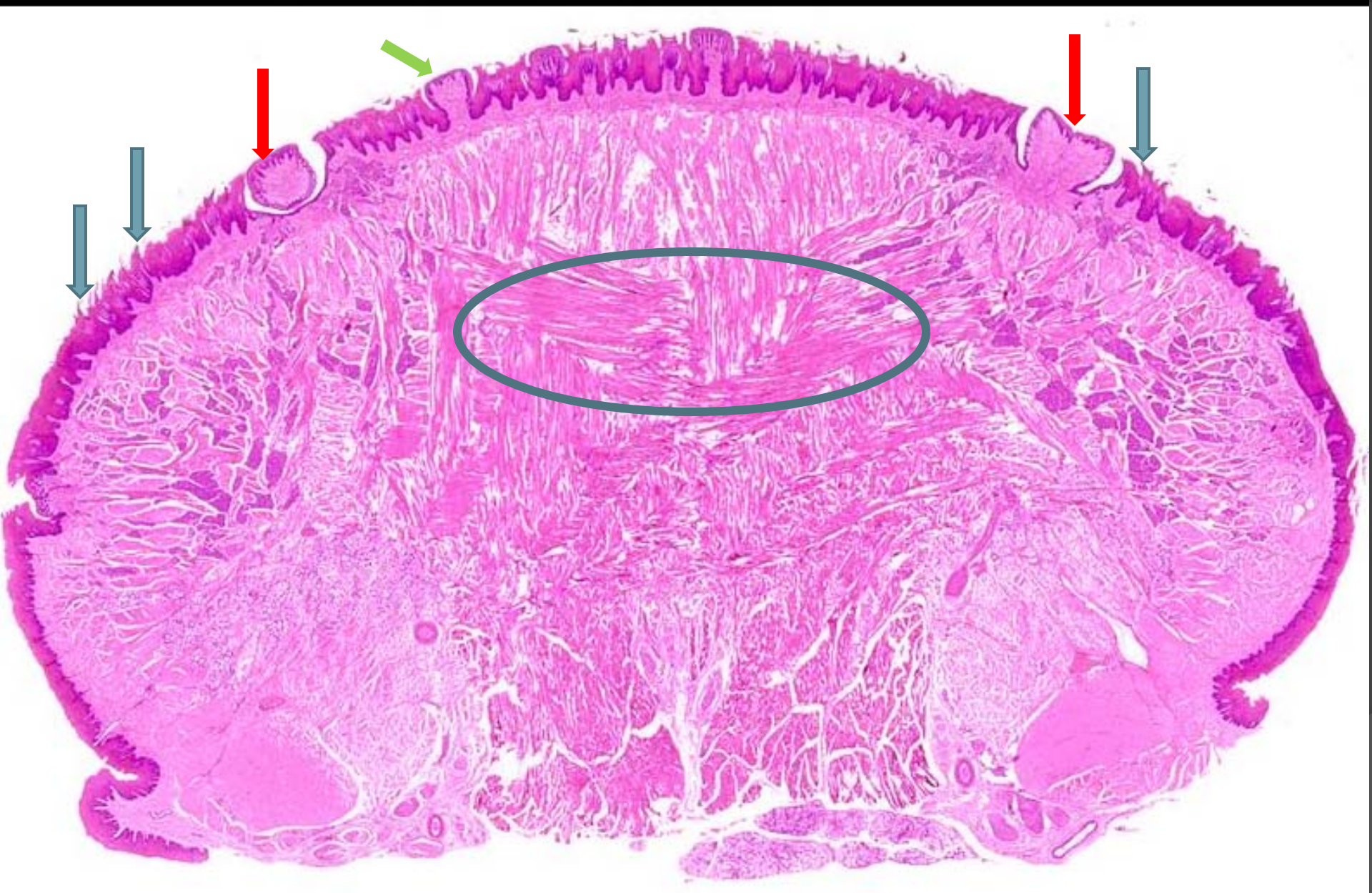
Filiform: allover the tongue, conical, keratinized, no taste buds.

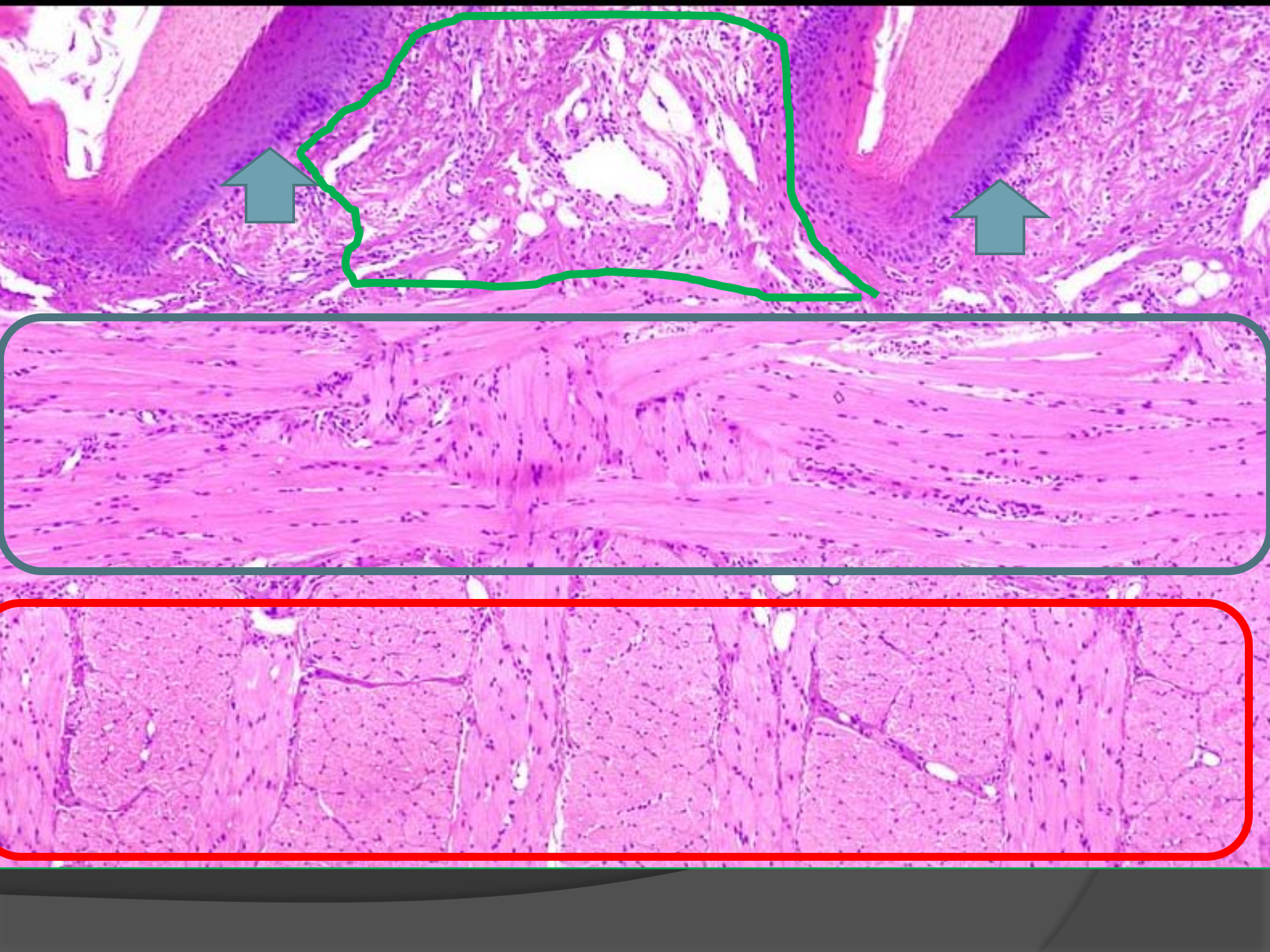
Fungiform: mushroom-like, contain taste buds in their apices.

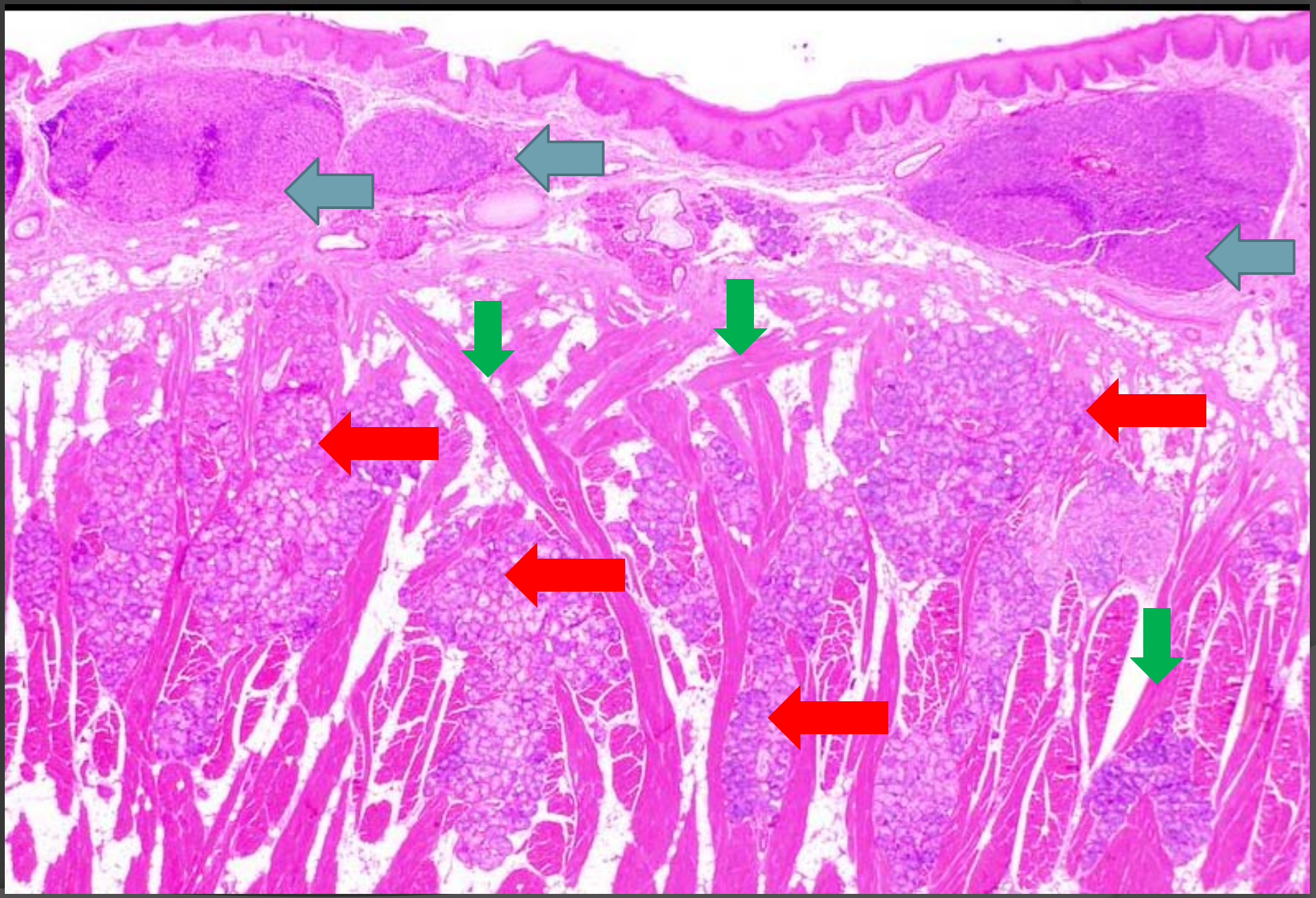
Foliate: poorly developed in humans, present on the dorsolateral part, contain many taste buds.

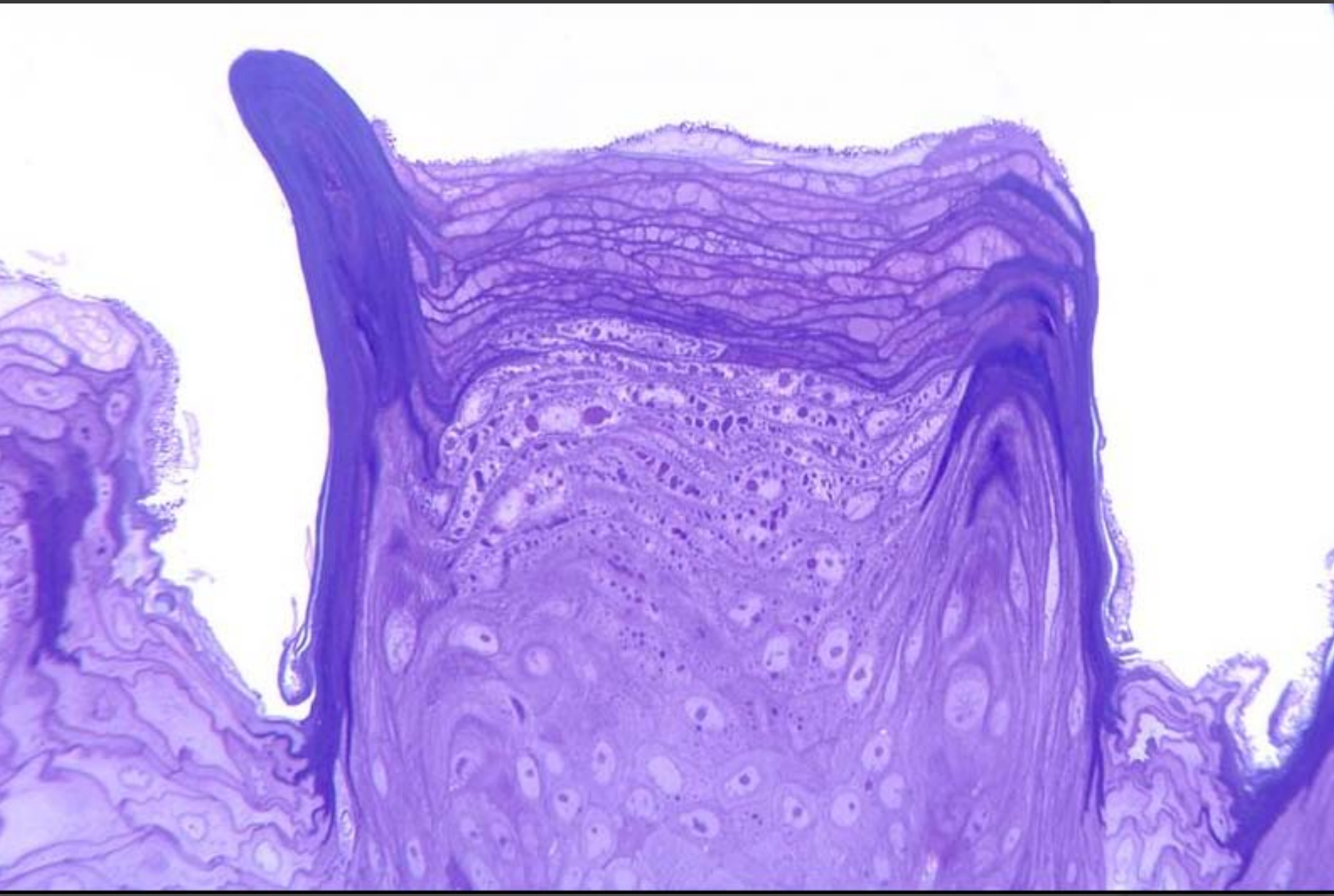
Circumvallate:

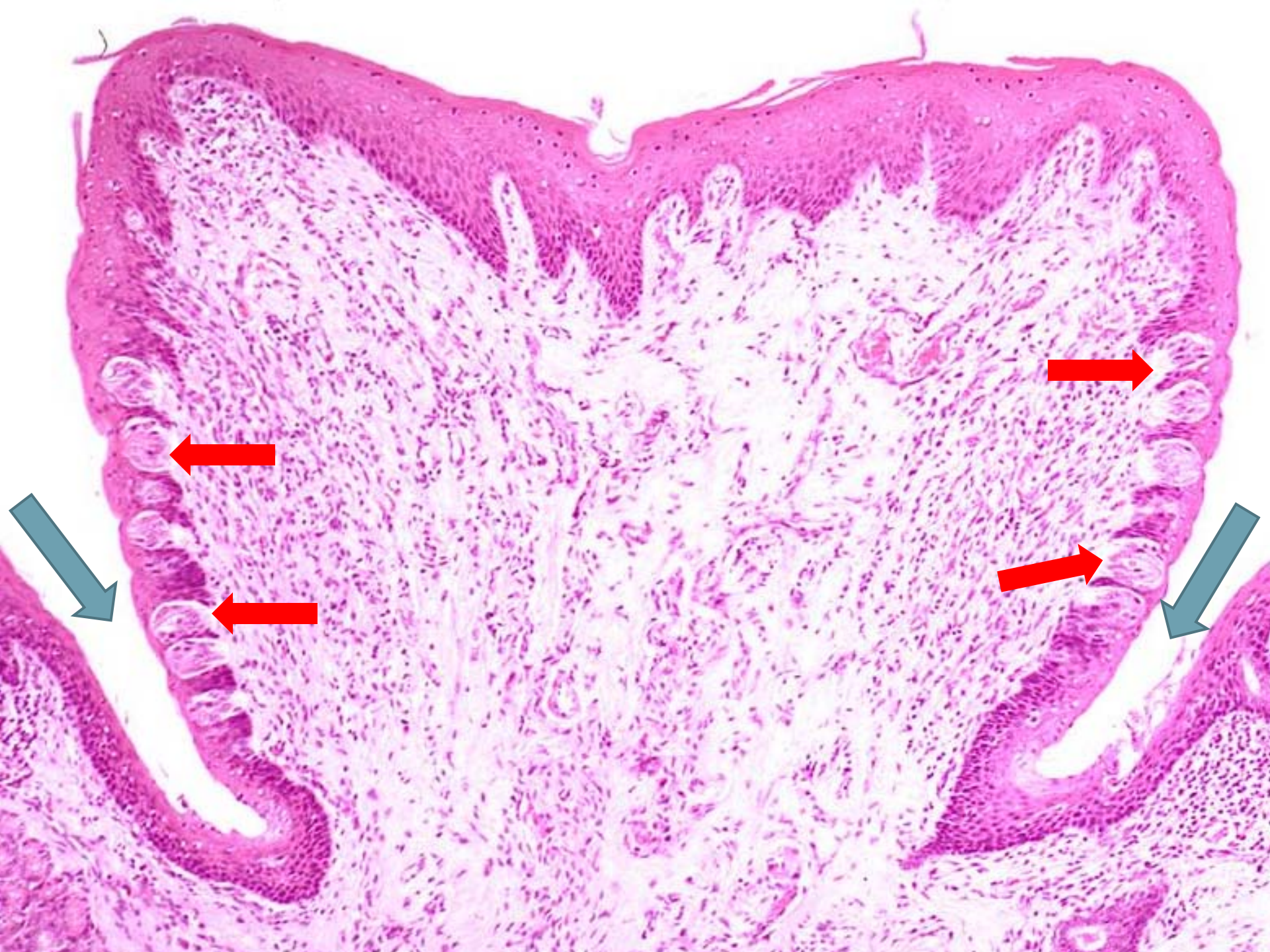
- 8-18 in number in front of the sulcus terminalis.
- Have taste buds on their sides.
- Each surrounded by deep groove (sulcus).
- Serous glands (Von Ebner) open in the bottom of the sulcus:
  - Secrete lingual lipase

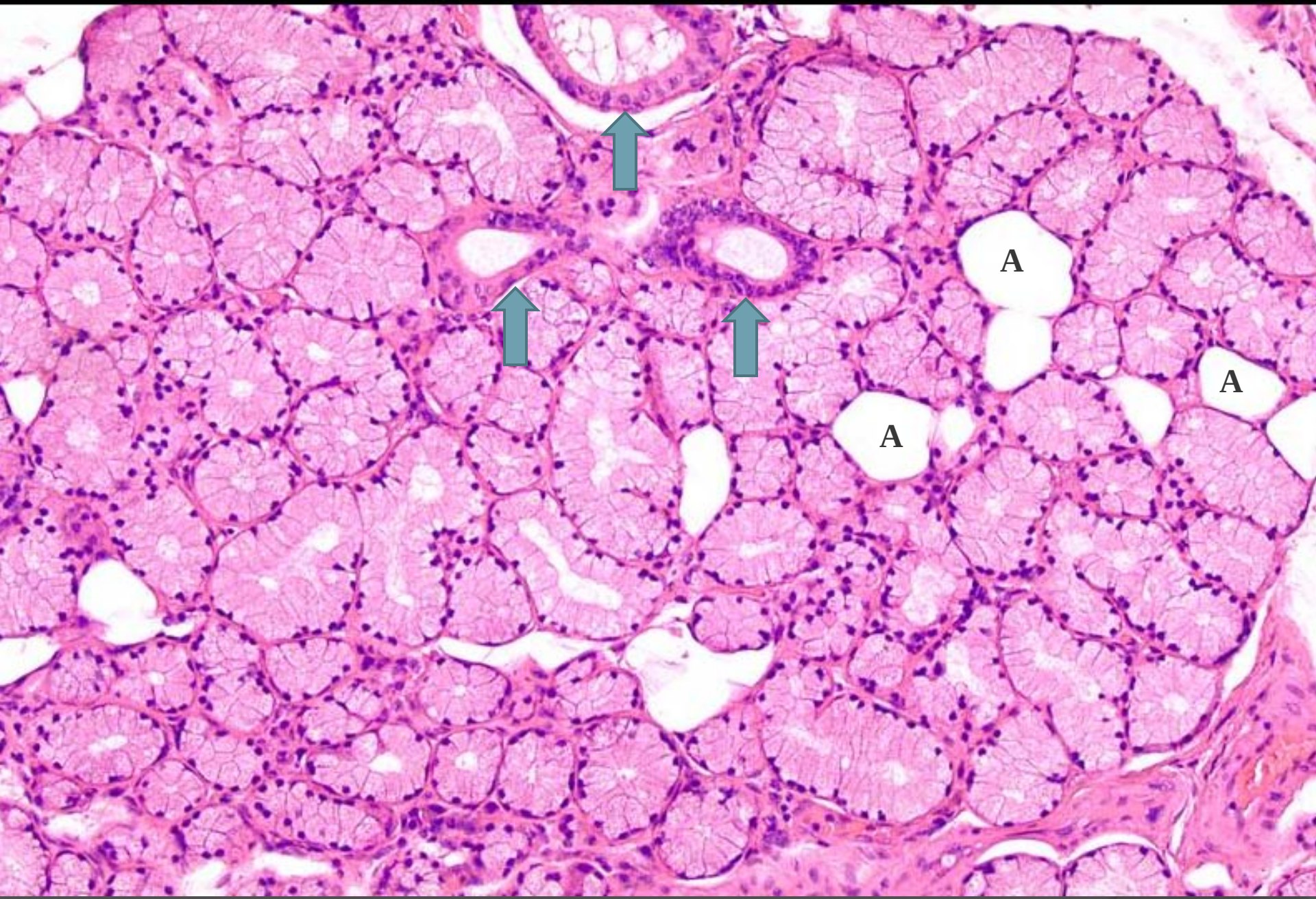








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Salivary Glands

Remember

Glands are divided according to the nature of their secretions into:

- Serous
- Mucous
- Mixed
  - Seromucus
  - mucoserous

Remember

Glands are divided according to their duct systems into:

- Simple
- Compound

Glands are divided according to their secretory parts into:

- Tubular; coiled, branched
- Alveolar, branched
- Tubeolalveolar

Read the anatomy of the major salivary glands from your anatomy book.

Divided into:

- Minor salivary glands: distributed allover the oral cavity and account for ~ 10% of saliva and most of the mucus secreted.
- Major salivary glands:
  - Parotid: purely serous in humans.
  - Submandibular: seromucus.
  - Submandibular: mucus except for the serous demilunes.

Major salivary glands

Each surrounded by a capsule of variable thickness.

Septa divide the gland incompletely into smaller lobules.

The duct system is branching (compound).

The secretory part contains two types of cells:

- Serous
- Mucous

Mucous Cells

Cuboidal-columnar.

Basal nucleus.

Cytoplasm contains glycoprotein (mucin).

Tend to be arranged in tubules.

- In the submandibular and sublingual glands the end of the tubule is surrounded by a serous demilune.

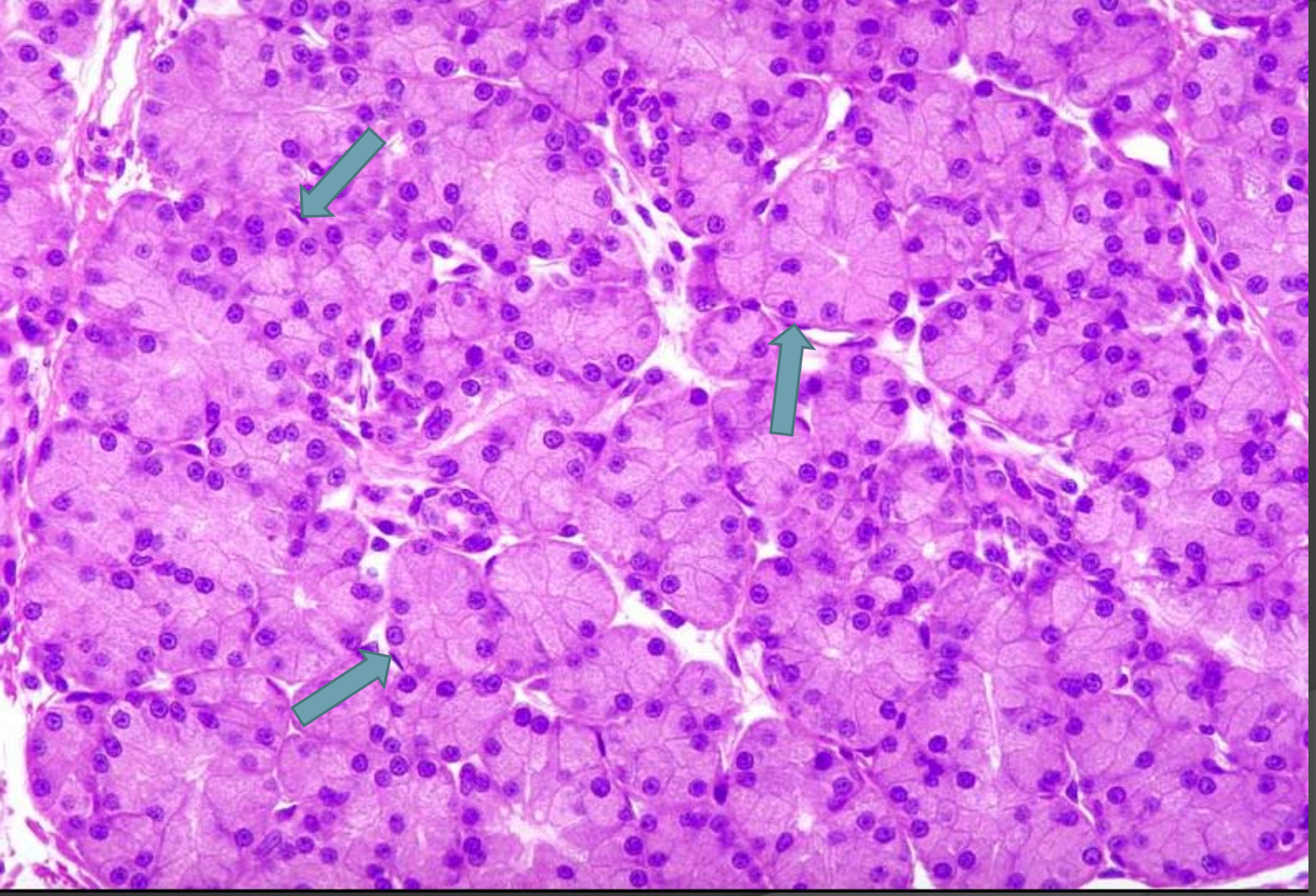
Serous Cells

- Pyramidal in shape.
- Have short irregular microvilli on the apical part.
- Typical protein synthesizing cells.
- Adjacent cells are joined by tight junctions.
- Cells are present in acini.

Myoepithelial Cells

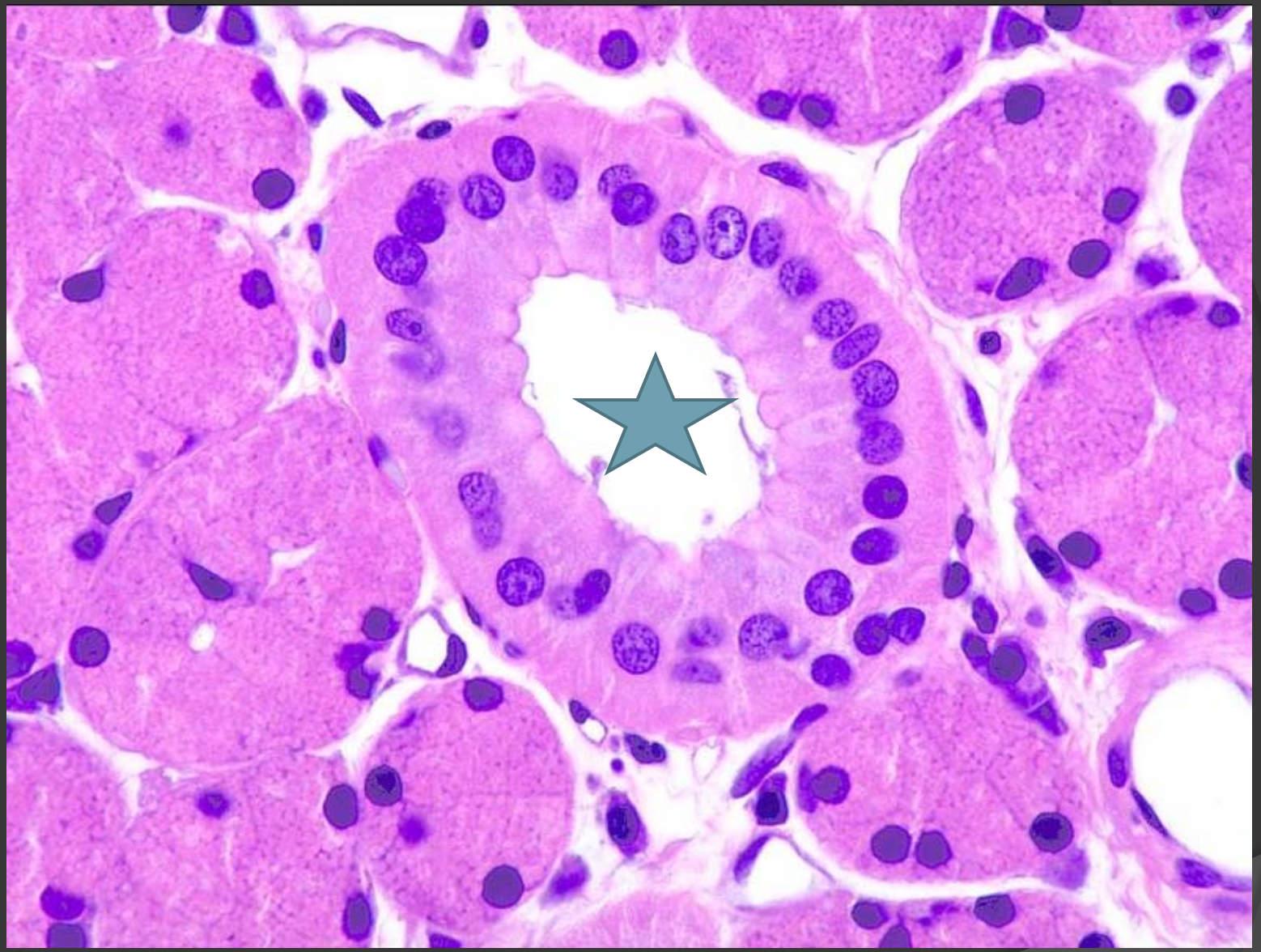
- Found between basal lamina and cells of the secretory parts and beginning of ducts.
- Appear branched (basket cells).
- Resemble smooth muscles.
- Have junction with each other and with cells of the secretory part.
- They support the secretory part.

Intercalated duct	• Cuboidal epithelium, high mitotic activity, differentiate into secretory and duct cells.
Striated duct	• Columnar cells, basal striations.
Interlobular (excretory)	• Pseusdostratified-stratified cuboidal change gradually to stratified squamous non keratinized.

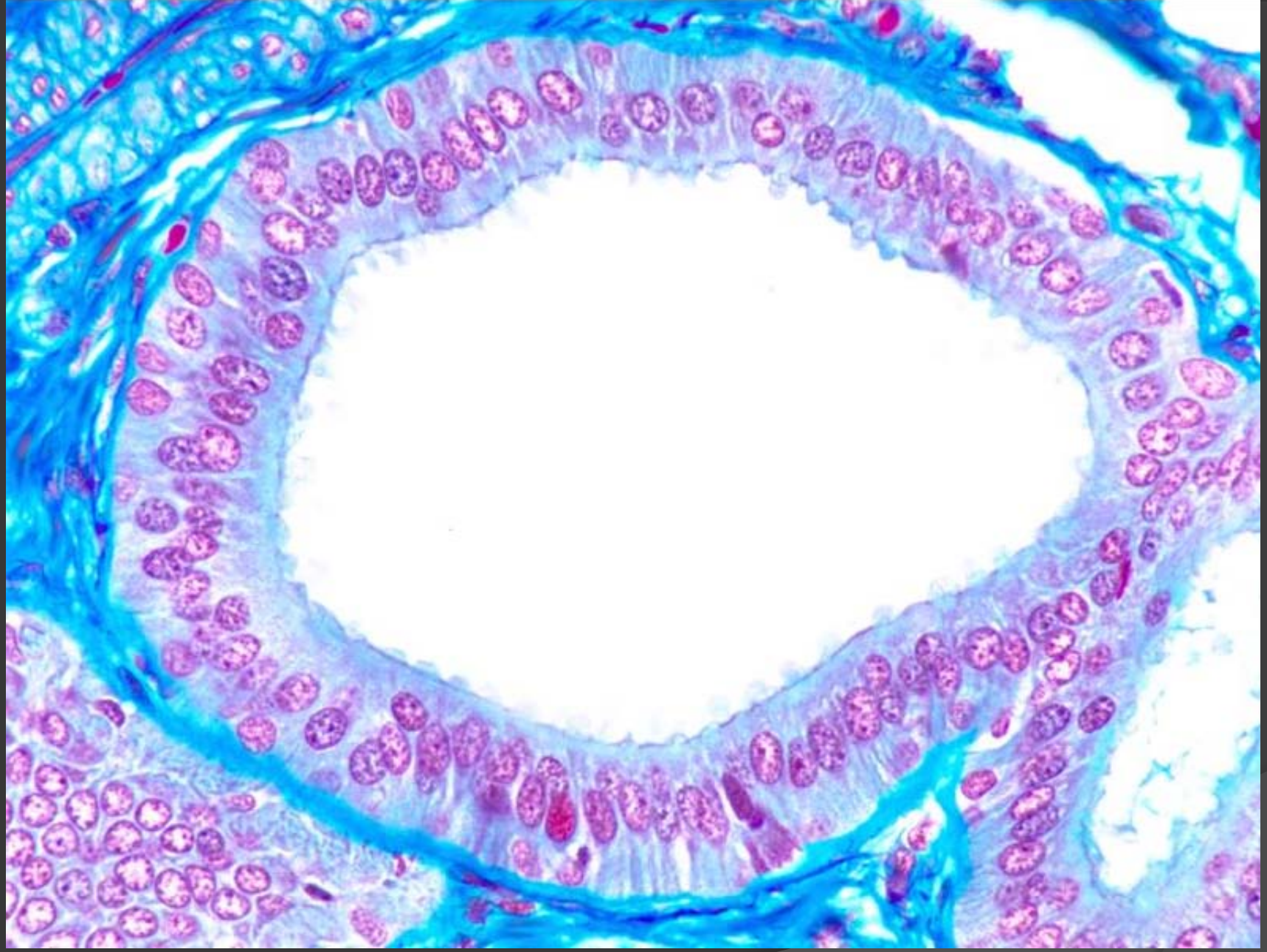


Parotid gland

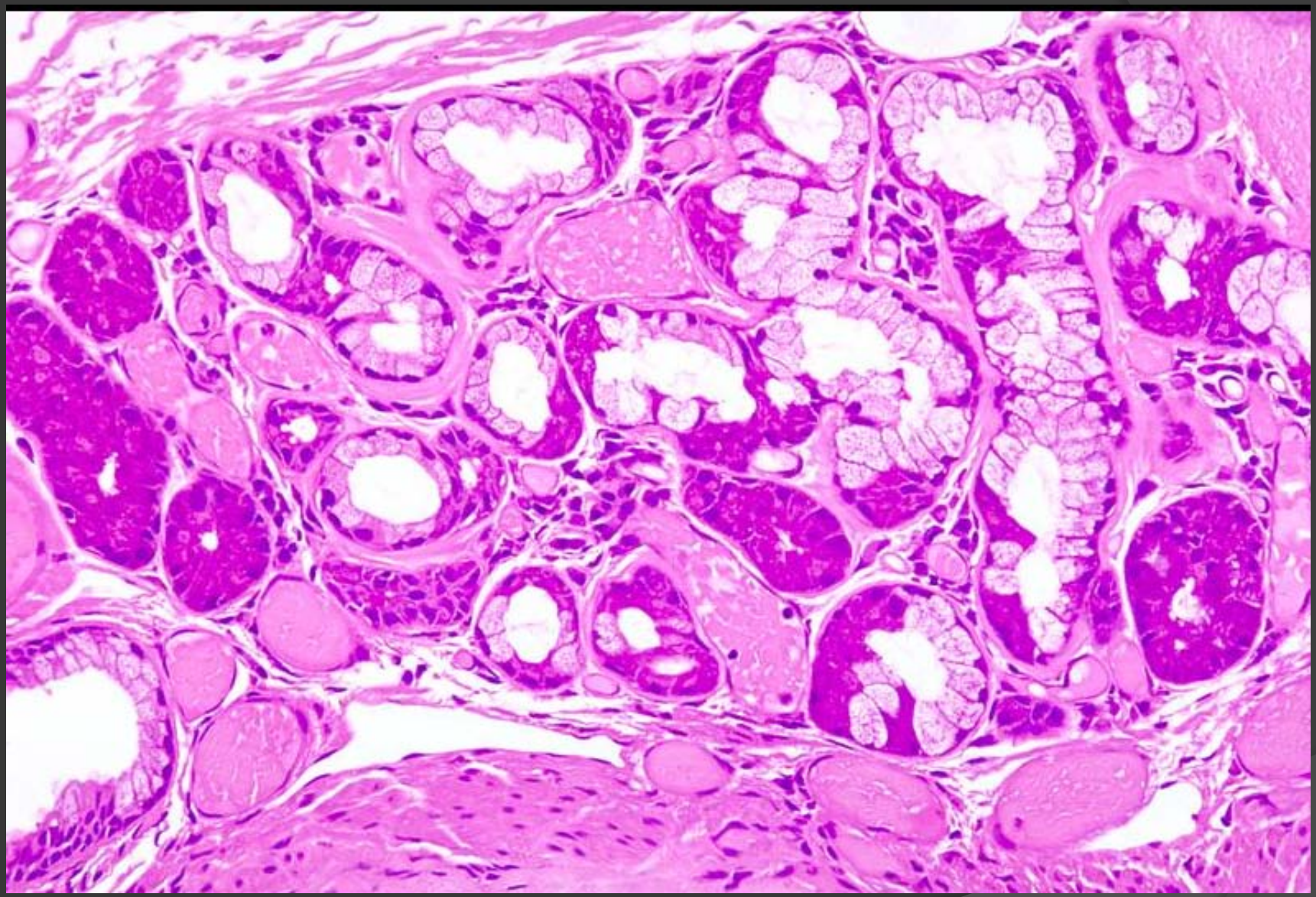
Blue arrow: myoepithelial cell



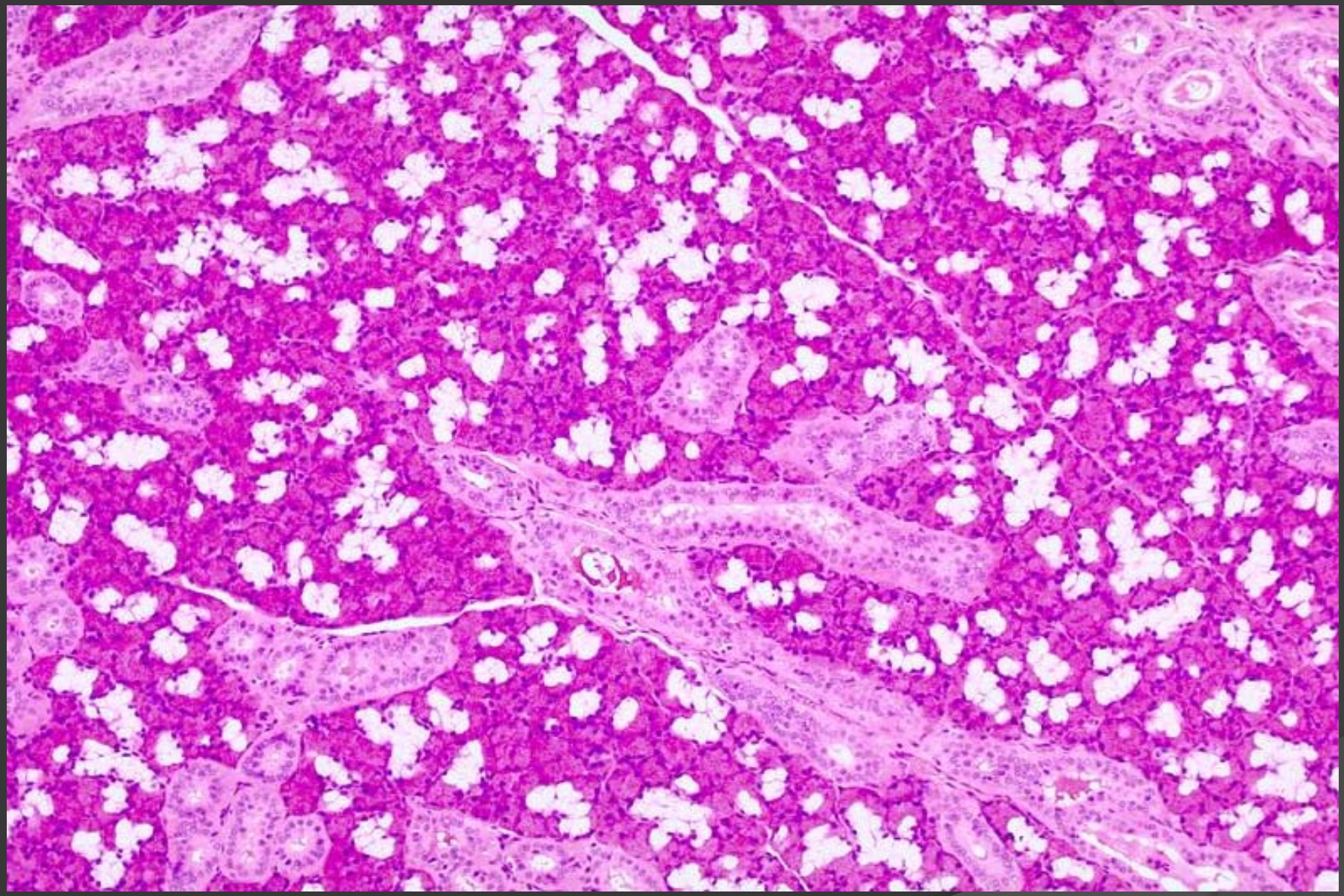
Striated duct



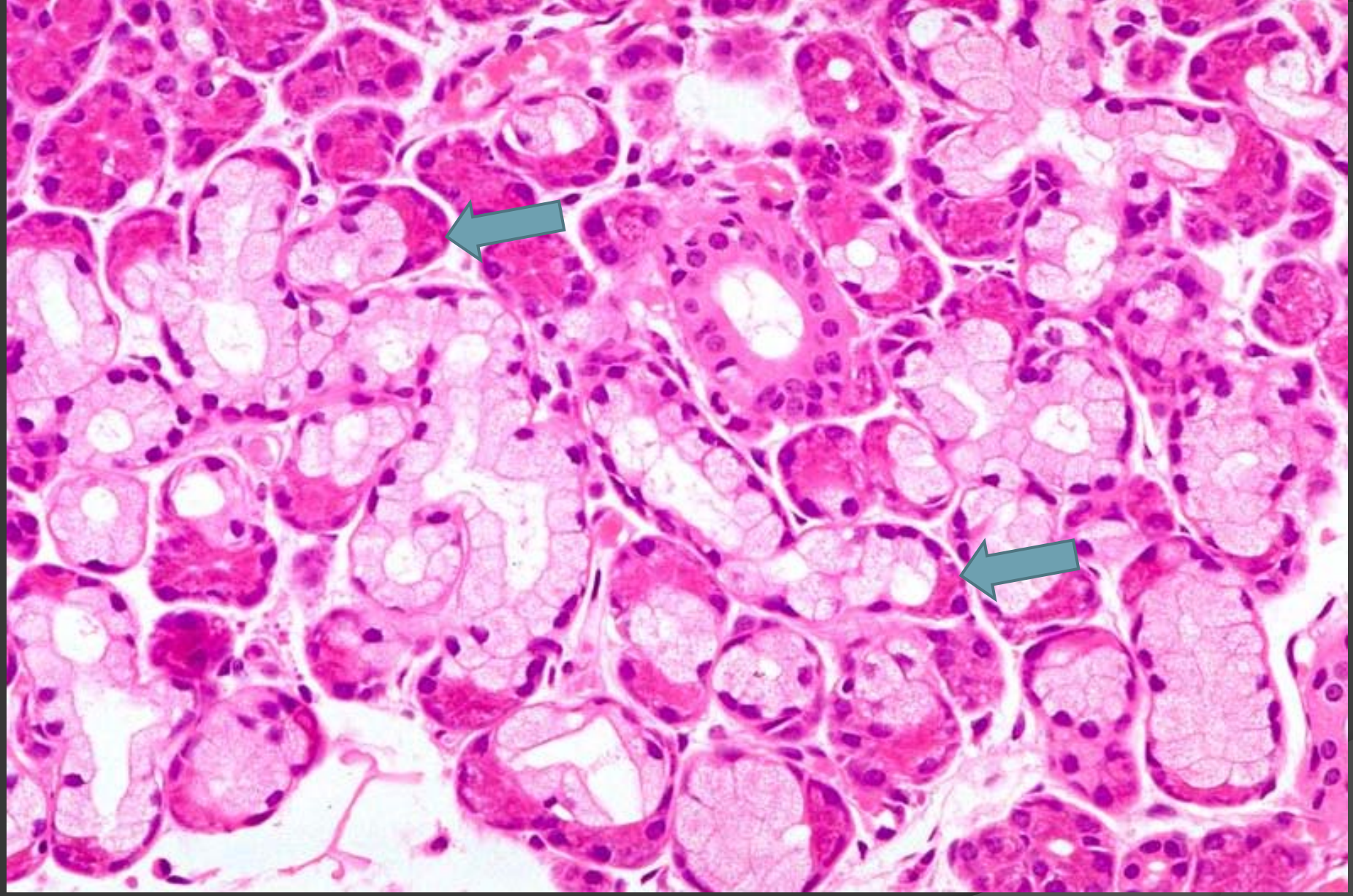
Interlobular duct



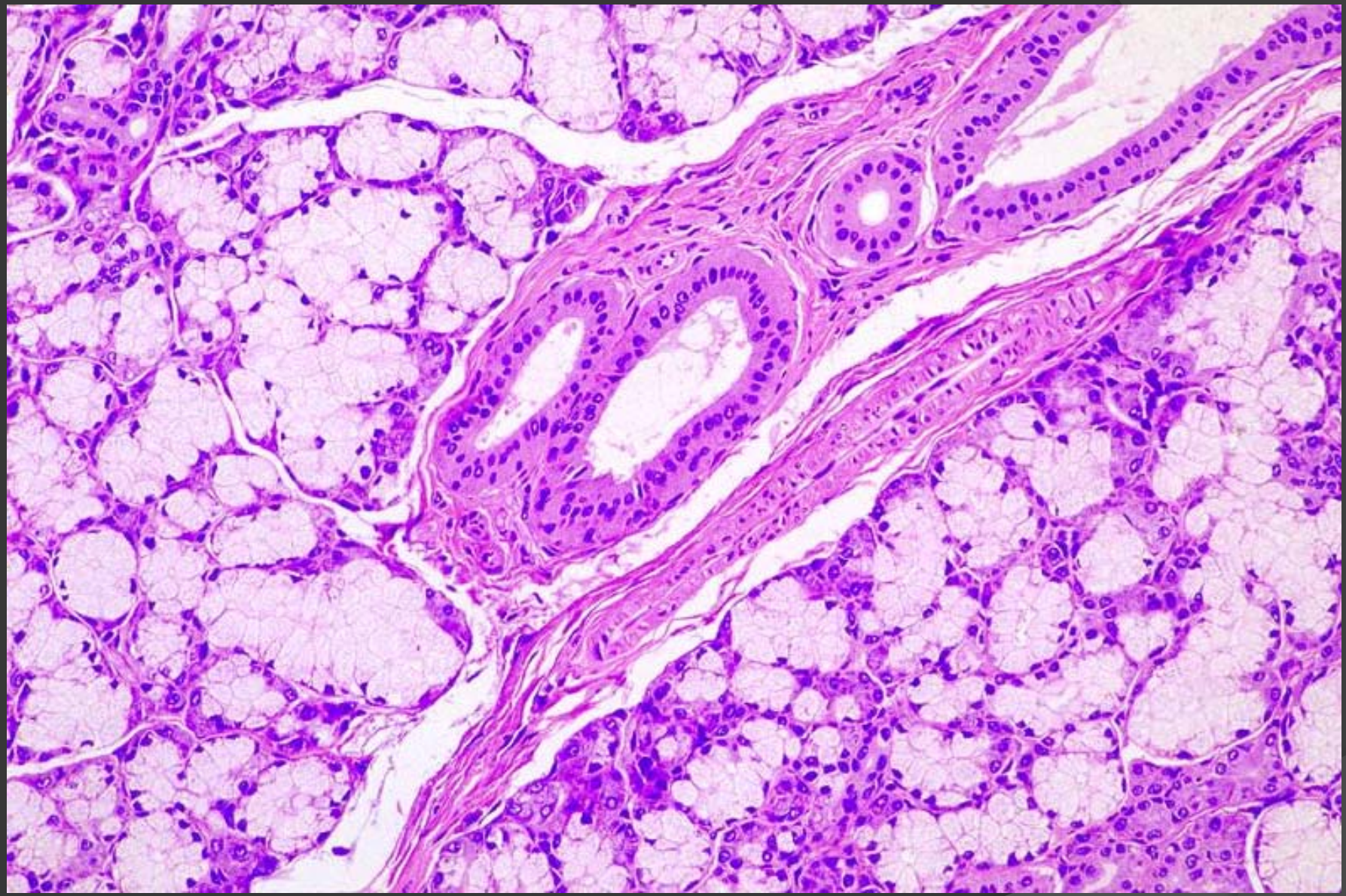
Submandibular salivary gland



Ssubmandibular salivary gland



Blue arrows: serous demilunes



Sublingual salivary gland

	Parotid	Submandibular	Sublingual
Location	Fills the space between mastoid process and mandible	Below the mandible	Floor of mouth
Classification	Compound tubuloalveolar	Same	Same
Stroma	Dense capsule and septa	Less dense capsule and septa	No capsule, many septa and lobules
Secretory epithelium	Serous	Seromucous	Mostly mucous
Intercalated ducts	Long and branched	Similar but shorter	Absent
Striated ducts	abundant	Same as parotid but longer	Rare or absent
Excretory ducts	Stenson’s	Wharton’s	Bartholin’s
Interstitial tissue	Abundant adipocytes	Few or no adipocytes	No adipocytes
function	Lubrication of food and partial digestion of carbohydrate	Same	Same