
Accessory digestive organs

Salivary glands

Salivary glands

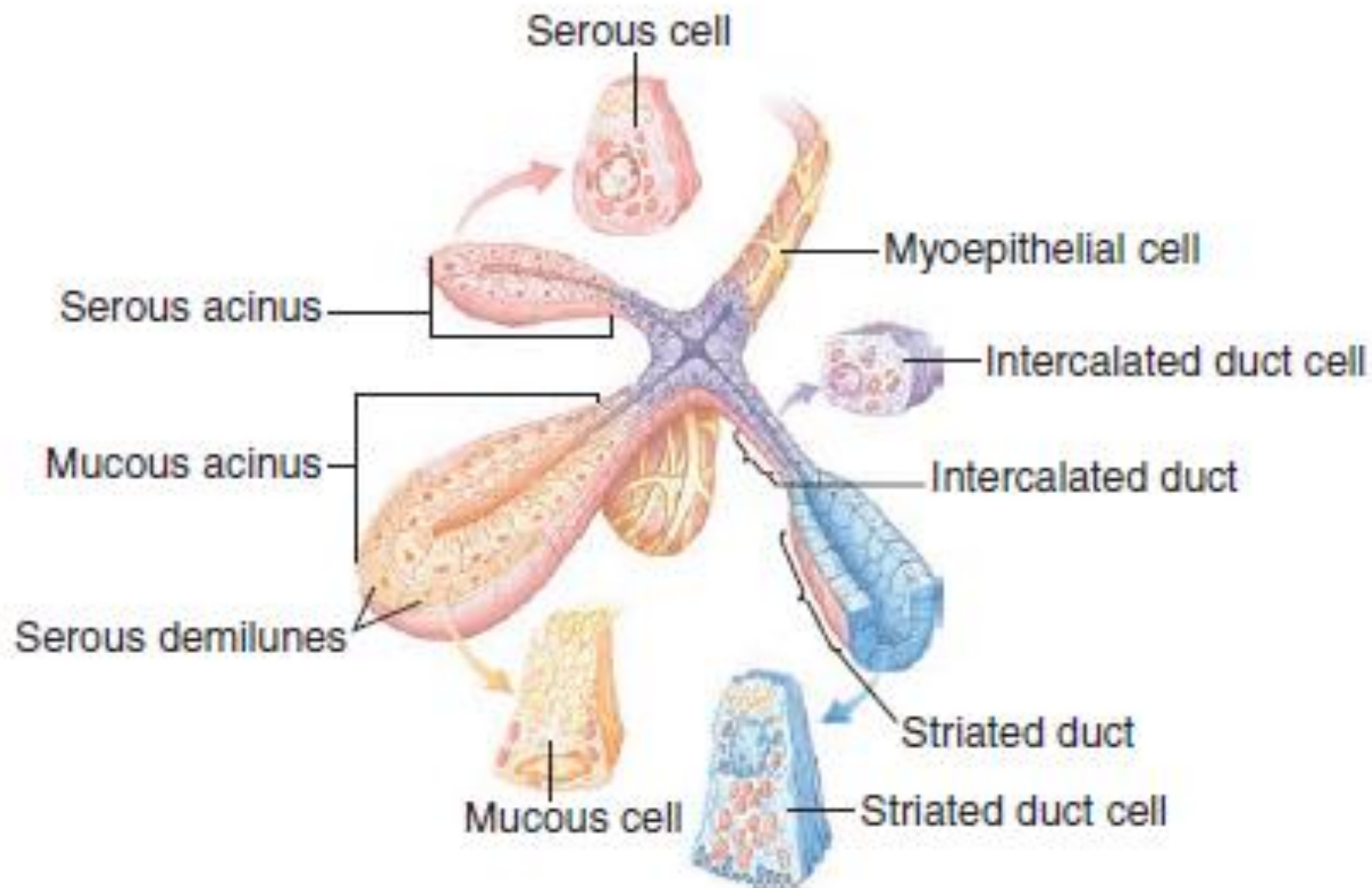
- Exocrine glands in the mouth produce saliva. The main **functions** of the salivary glands are to moisten and lubricate ingested food and the oral mucosa, to initiate the digestion of carbohydrates and lipids with amylase and lipase, and to secrete protective bacteriostatic substances such as the immunoglobulin IgA, lysozyme, and lactoferrin.
- **There are three pairs of major large salivary glands** **The parotid, submandibular, and sublingual glands** are structurally very similar to one another, although they produce various secretions.
- In addition to **minor** glands in mucosa and submucosa throughout the oral cavity which secrete 10% of the total volume of saliva, include **palatine ,labial , buccal ,molar** and **lingual** glands.

- The **secretion** of each gland is either **serous**, **seromucous**, or **mucous**, depending on its content of the glycoprotein mucin.
- **Saliva** from the parotids is serous and watery. The submandibular and sublingual glands produce a seromucous secretion, while that of the minor glands is mostly mucous.
- **capsule** (dense connective tissue layer) surrounds an entire gland. Connective tissue septa penetrate the gland and subdivide it into lobes and lobules.

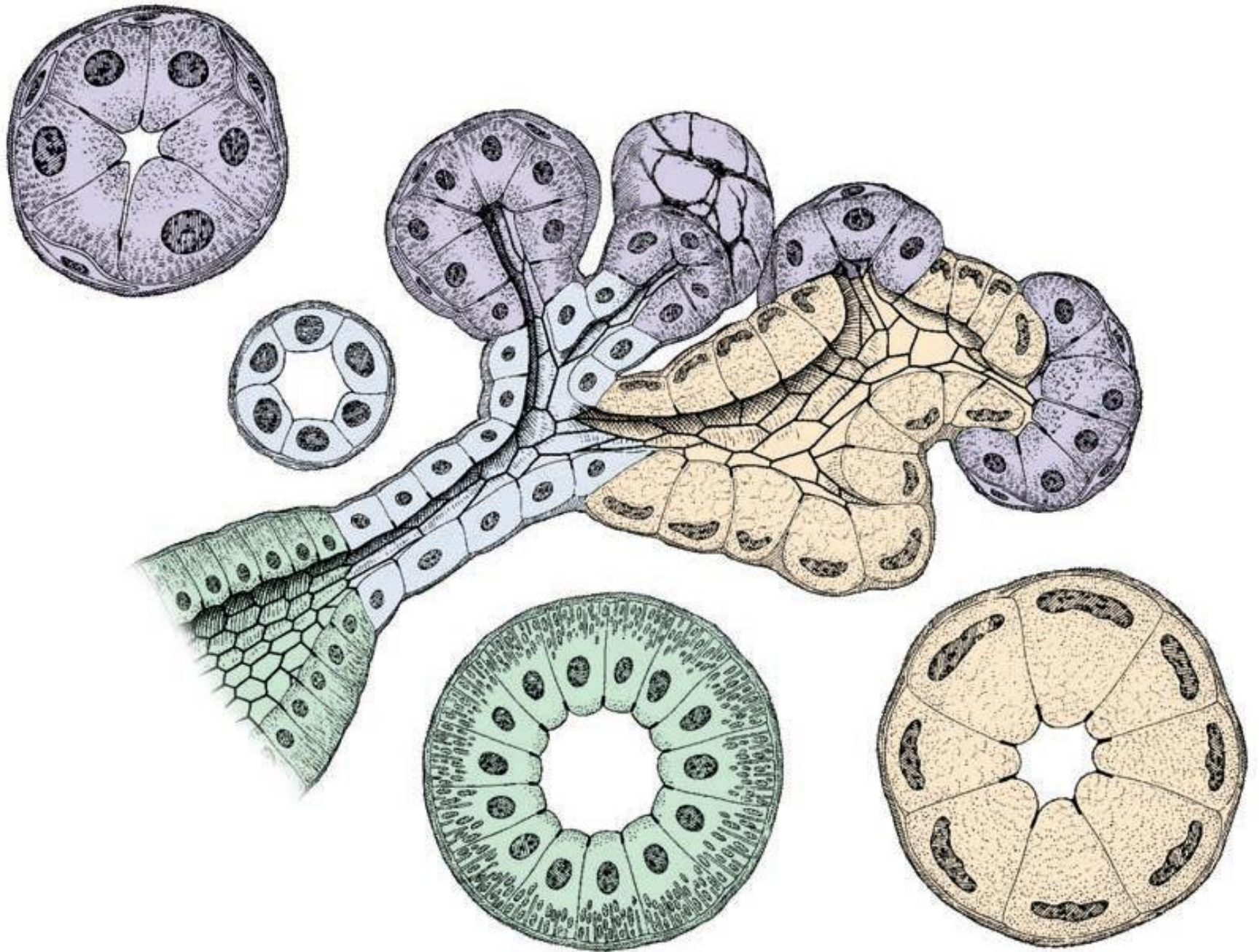
- **Each unit** of the salivary glands can be divided into **a secretory portion** and **a duct system**.
- The **secretory portion** contains serous cells, mucous cells, or a mixture of both. These secretory cells are arranged into **acini**, These **acini** are small saclike dilations located at the beginning of the **first** segment of the excretory duct system called the **intercalated duct** .
- **The duct system** includes intralobular ducts (located within the lobules), interlobular ducts (outside or between the lobules), lobar ducts, and a main duct. **The intralobular ducts** include intercalated ducts and striate ducts. The main duct empties the secretory products (saliva) into the oral cavity.

Three epithelial cell types comprise the salivary secretory units:

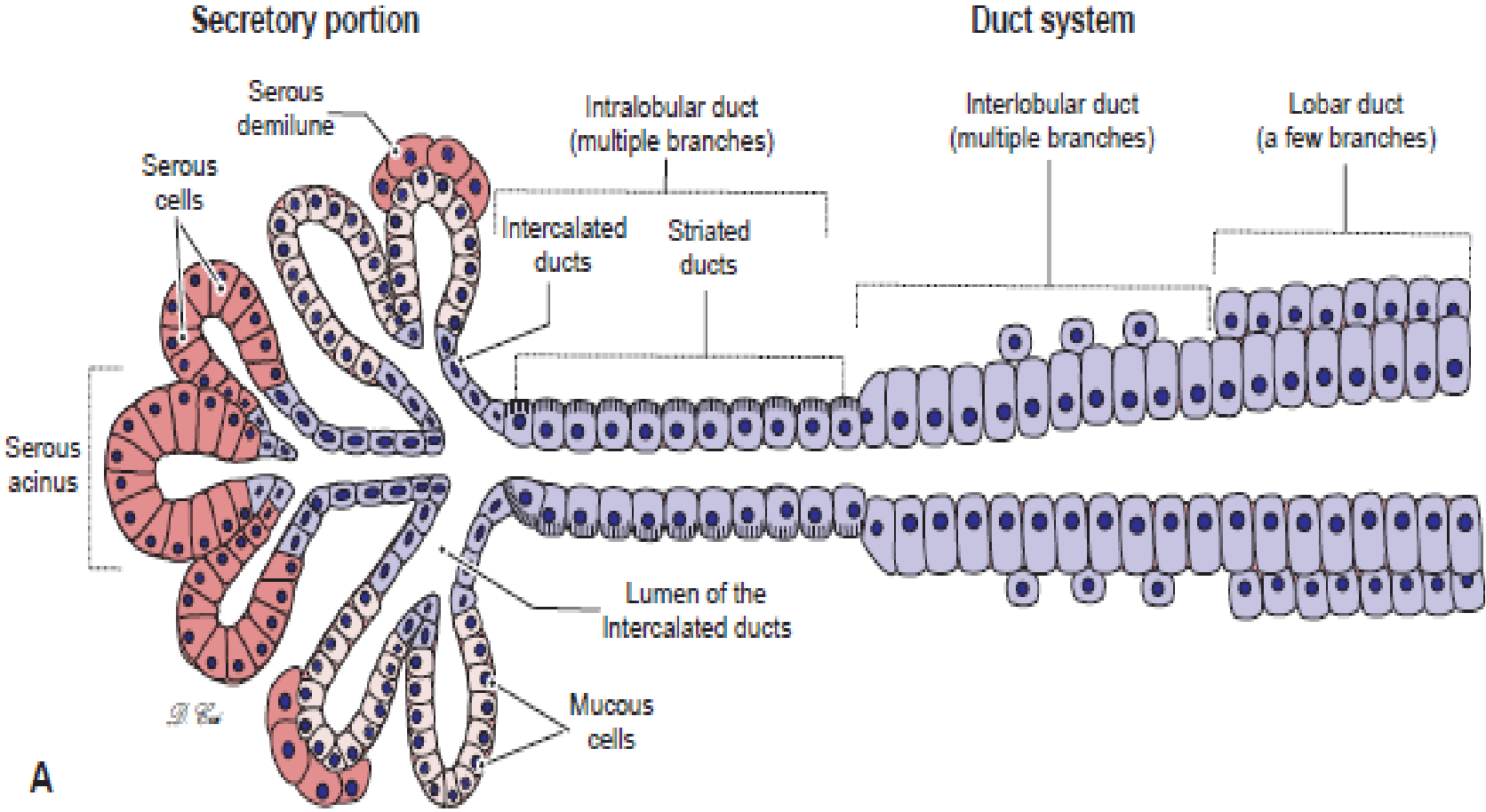
- ❑ **Serous cells** are polarized protein-secreting cells, usually pyramidal in shape, with round nuclei, well-stained RER, and apical secretory granules . serous cells form a somewhat spherical unit called an acinus with a very small central lumen.
- ❑ **Mucous cells** are somewhat more columnar in shape, with more compressed basal nuclei . Mucous cells contain apical granules with hydrophilic mucins. Mucous cells are most often organized as cylindrical tubules rather than acini.
- ❑ **Myoepithelial cells** are found inside the basal lamina surrounding acini, tubules, and the proximal ends of the duct system. These small, flattened cells extend several contractile processes around the associated secretory unit or duct and their activity is important for moving secretory products into and through the ducts.



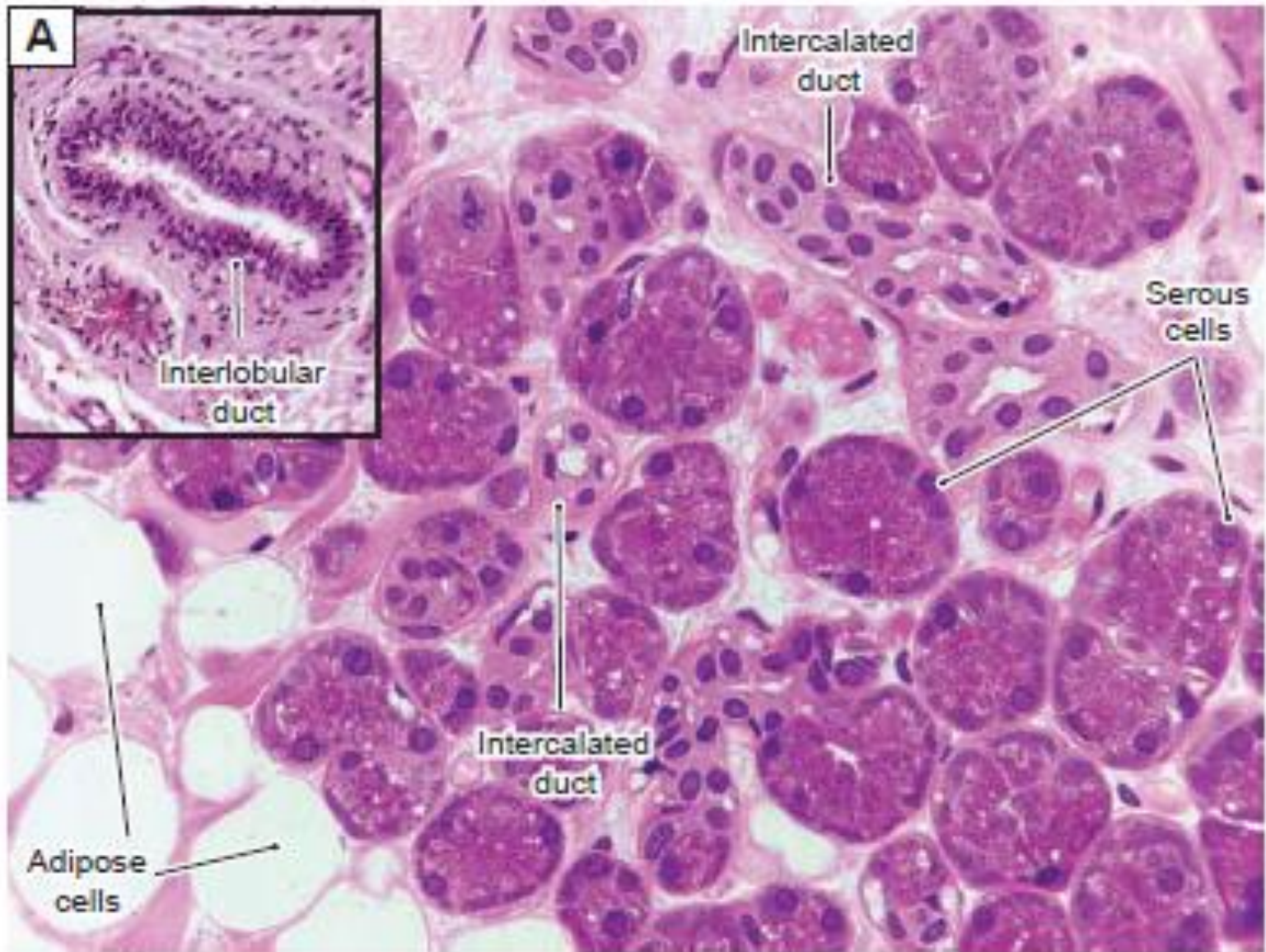
Salivary glands



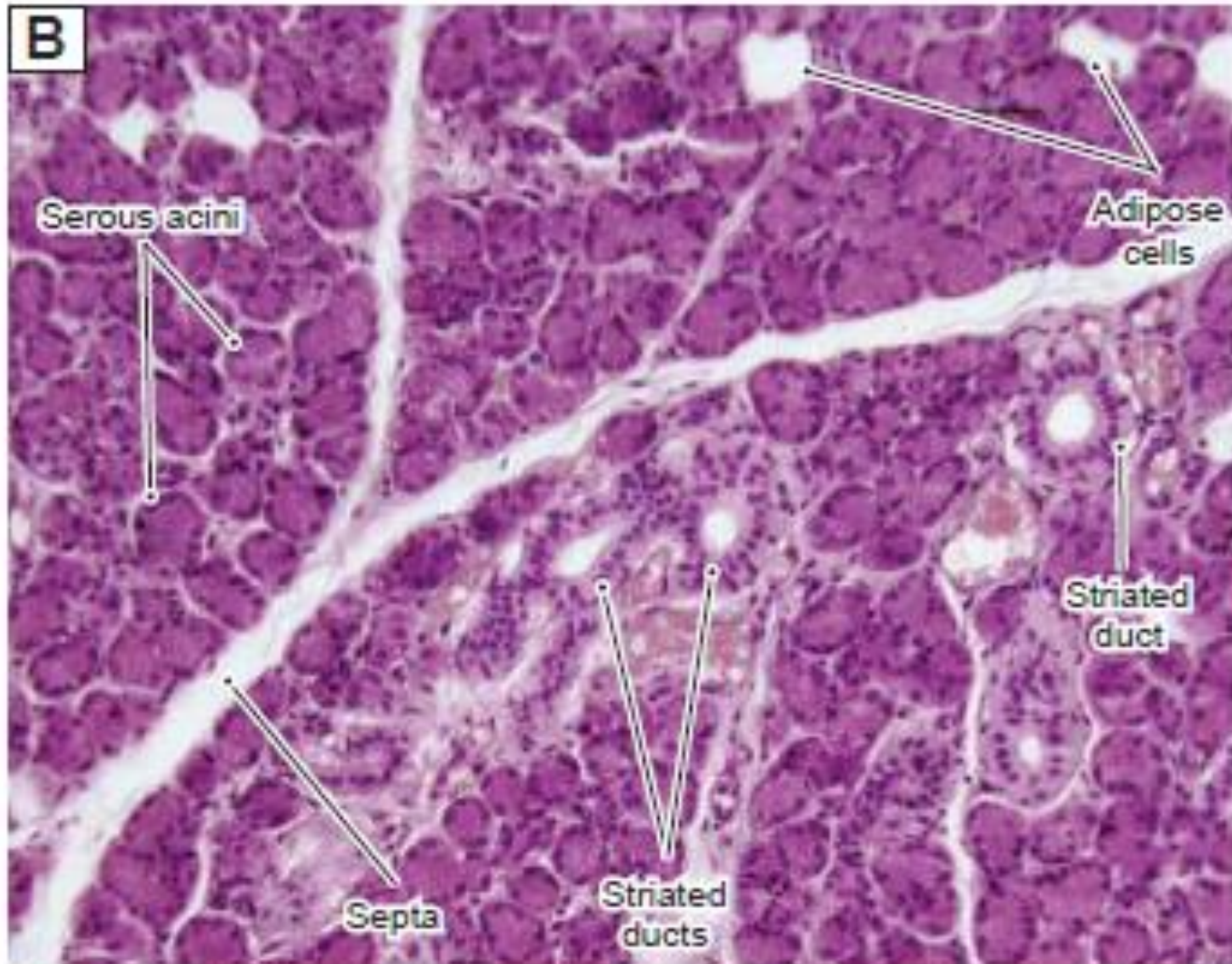
Salivary Glands



The parotid gland is the largest of the three major salivary glands . located in each cheek near the ear, are branched acinar glands with exclusively **serous** acini . This gland is surrounded by a connective tissue capsule. Its secretory unit is composed of only **serous** cells, which produce watery proteinaceous fluid .



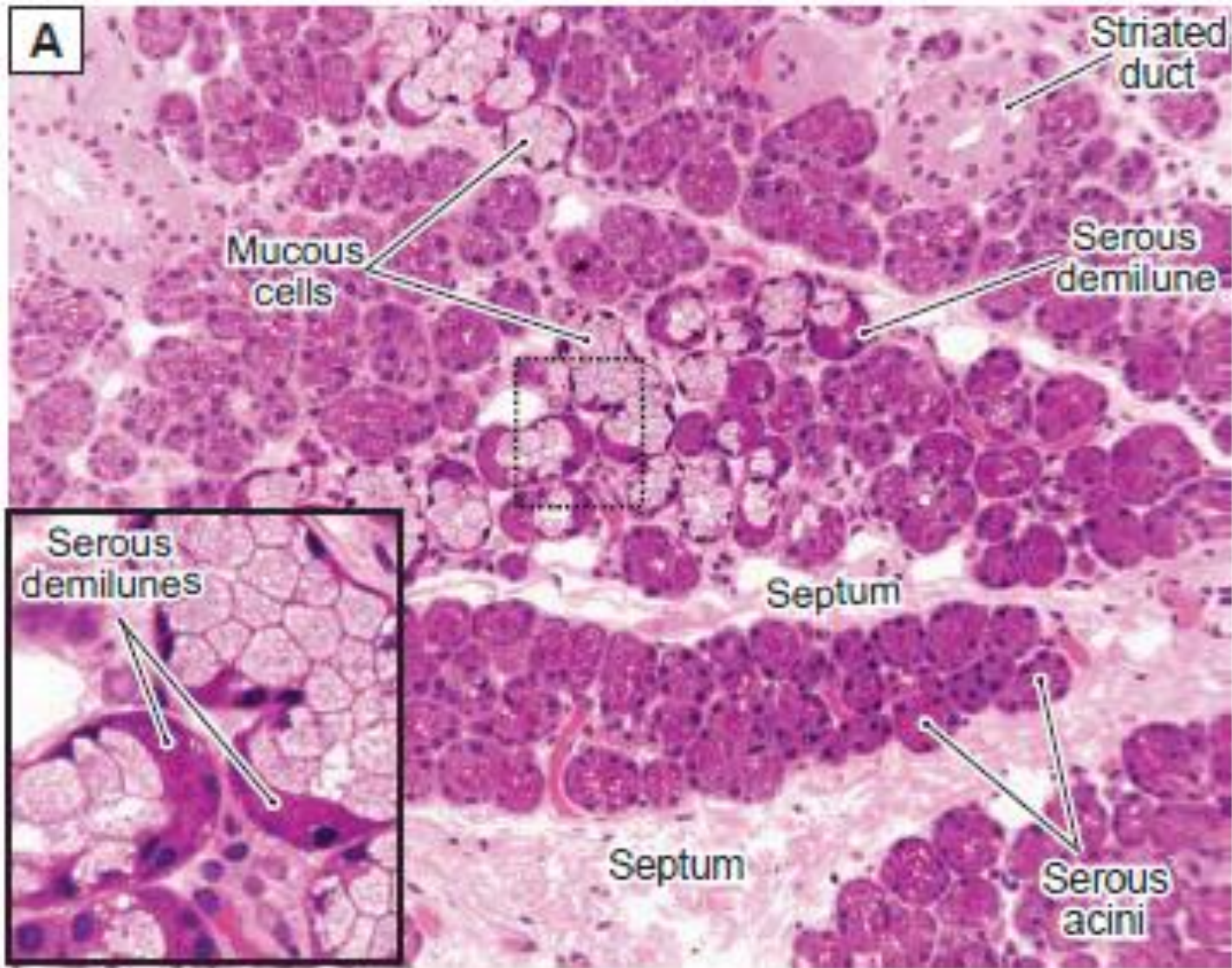
Parotid gland



Parotid gland

The submandibular gland is the second largest salivary gland, it is located under the floor of the oral cavity adjacent to the mandible. This gland is surrounded by a connective tissue capsule.

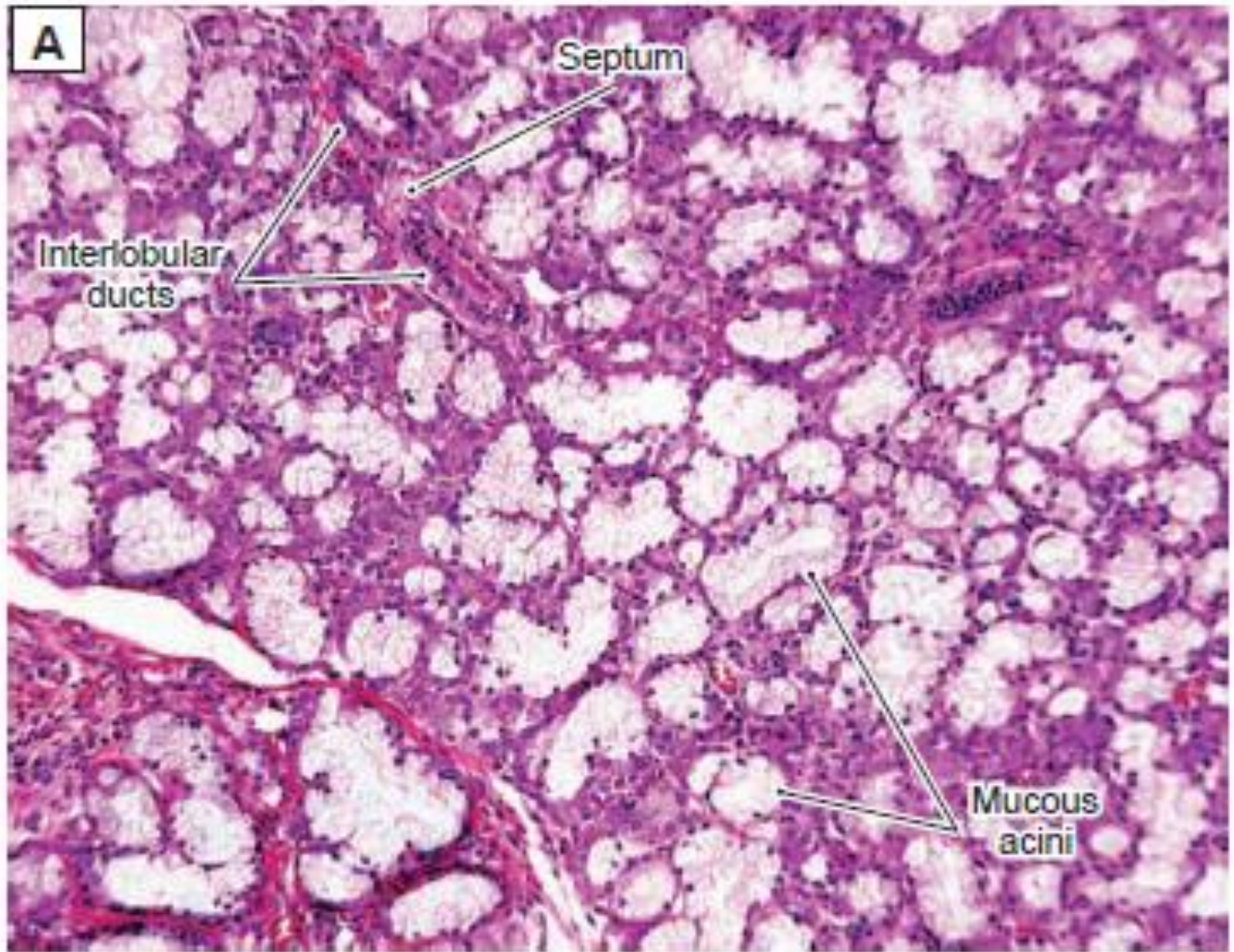
- ❖ They are **branched tubuloacinar** glands, having primarily **serous** acini, but with many mixed tubuloacinar secretory units , although the majority of cells are serous cells. The secretory unit is composed of both serous and mucous cells.
- ❖ Within the mixed units grouped serous cells occur distally on short mucous tubules and often assume a **crescent-shaped** arrangement called a **serous demilune** .



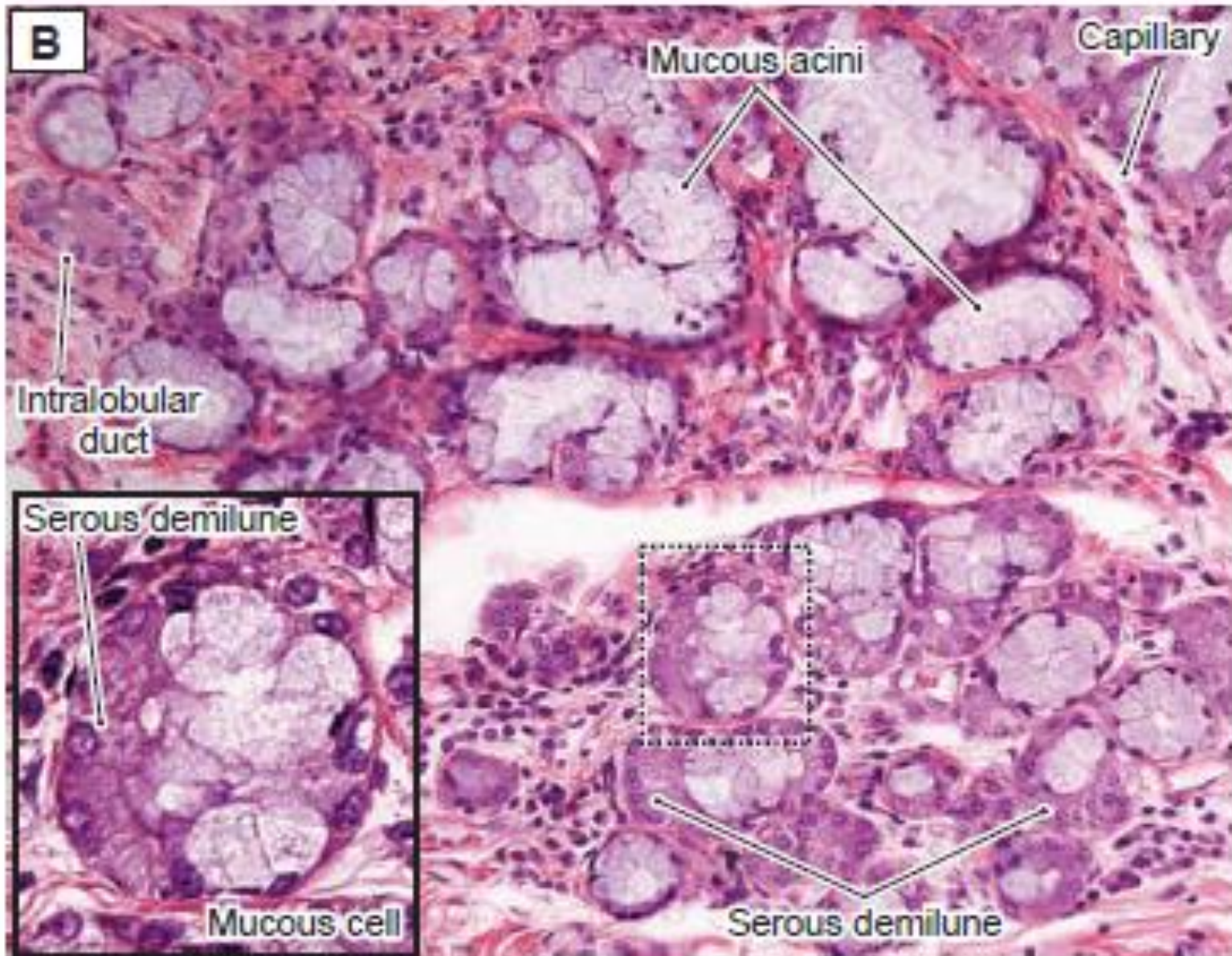
Submandibular salivary gland

The sublingual gland the smallest of the major glands, are paired glands and are located deep in the floor of the oral cavity, anterior to the submandibular glands.

- ❖ They are covered by the oral mucosa. But have no capsule (dense connective tissue).
- ❖ They are also considered **branched tubuloacinar** glands, but here secretory tubules of **mucous** cells predominate and the main product of the gland is mucus .
- ❖ .Acini that are completely **serous** are **few**, but serous demilunes are commonly present.
- ❖ Striated ducts are not as obvious as in the other two types of salivary glands .



Sublingual salivary gland



Sublingual salivary gland