

# Glandular Epithelial

# 2 Types of Glands

**based on the mechanism of their secretion**

**Exocrine Glands**

**Endocrine Glands**

**Paracrine Glands**



# Exocrine Glands

## Types of Exocrine Glands

- 1) **Simple tubular glands** - These glands are epithelial-lined tubules, which open on the apical surface. There are three types.
  - a) **Simple straight tubular glands** - The long crypts of Lieberkühn, located within the colon, are a great representation of tubular glands that runs a straight, unbranched course.
  - b) **Simple coiled tubular glands** - Within the dermis, eccrine sweat glands are located. The deeper portion of these simple coiled tubular glands is easily seen; however, the long unbranched lumen that goes to the apical surface is rarely seen in cross-section.
  - c) **Simple branched tubular glands** - These simple branched tubular glands are found primarily in the stomach

- 2) **Simple alveolar (acinar) glands** - The best representation of simple alveolar glands is the paraurethral glands located in the penile urethra or the sebaceous glands located in the skin.
- 3) **Simple tubular-alveolar glands** - Some of the secretory cells are arranged as acini (alveoli) and others are arranged as tubules. Examples of these include some of the smaller glands of the respiratory tract; minor salivary glands located within the oral cavity are other examples.
- 4) **Compound tubular glands** - These glands have a highly branched duct system. The secretory cells at the ends of the ducts are in the form of tubules. Brunner's glands of the duodenum are compound tubular glands.
- 5) **Compound alveolar glands** - The duct system is similar to the compound tubular and compound tubulo-alveolar glands; however, compound alveolar glands differ from other compound glands in that the ducts end in alveoli with dilated sac-like lumina. The pancreas and parotid gland are the best examples of compound alveolar glands as they are entirely serous.
- 6) **Compound tubulo-alveolar glands** - These glands also have a highly branched duct system, but some of the ducts end as tubules and others end as alveoli. Two of the major salivary glands, the submandibular and the sublingual glands, are examples of compound tubulo-alveolar glands (as they are mixed glands).



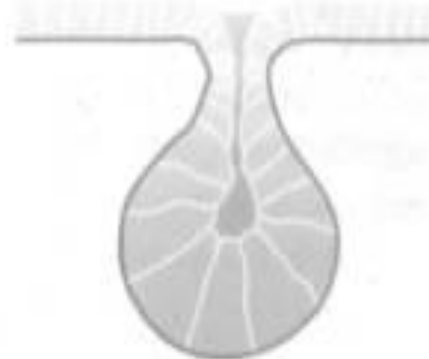
Simple tubular



Simple coiled tubular



Simple branched tubular



Simple acinar



Simple branched acinar



Compound branched tubular

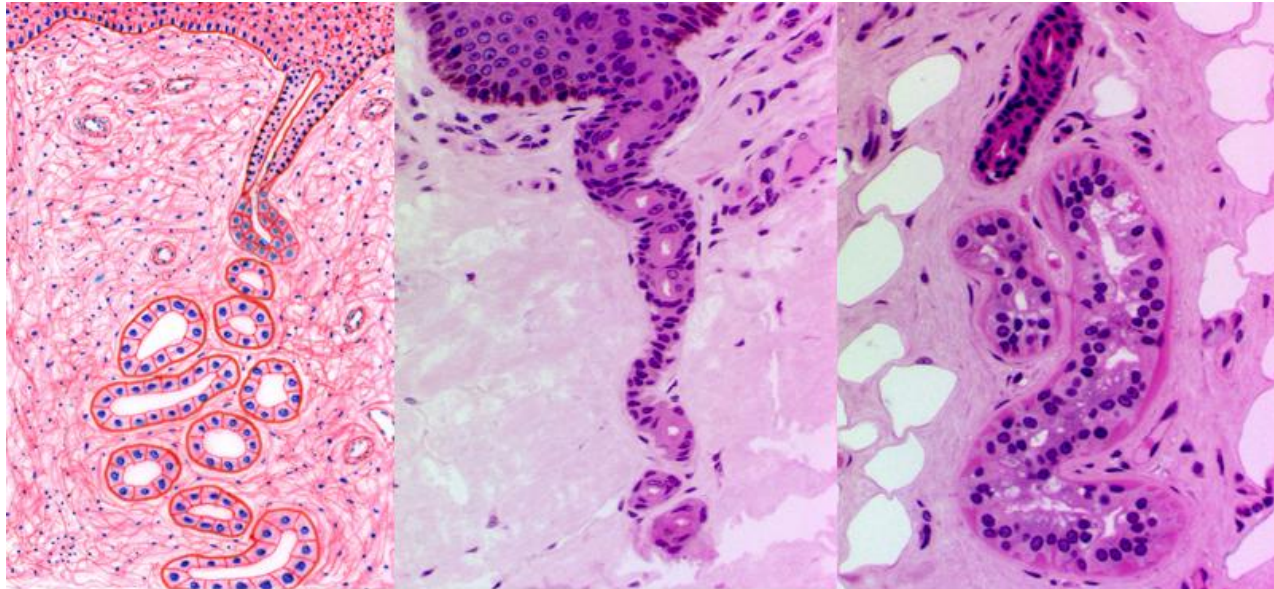


Compound acinar

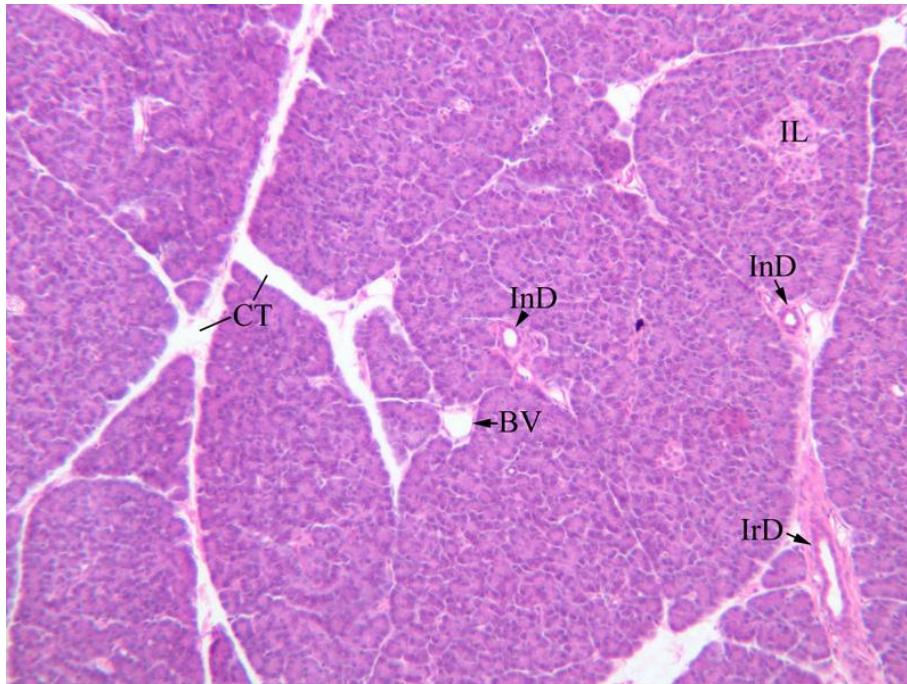


Compound tubulo-acinar

# Sweat Gland



# Pancreatic Gland



InD - intralobular duct IrD - interlobular duct  
CT - connective tissue BV - blood vessel IL - islet of Langerhans

