

## Ovalle: Netter's Essential Histology, 2nd Edition

### Chapter 2: Epithelium and Exocrine Glands

#### Test Bank

#### MULTIPLE CHOICE

1. Goblet cells are typically found in which type of epithelium?
  - a. Pseudostratified columnar
  - b. Simple cuboidal
  - c. Simple squamous
  - d. Stratified squamous
  - e. Transitional

ANS: A

Tall, columnar mucus-secreting goblet cells are found only in association with other columnar epithelial cells and differentiate under the influence of a protein called Math-1 that is produced within this type of epithelium. See 2-6.

2. A serous demilune is defined as a(n):
  - a. A collection of secretory acini that drain into a single duct
  - b. An association of secretory vesicles at the apical surface of an epithelial cell
  - c. A bright-staining segment of a basal lamina beneath glandular epithelial cells
  - d. A collection of serous cells adjacent to mucus cells of a salivary gland
  - e. Simple cuboidal cells that constitute the duct portions of salivary glands

ANS: D

Swelling of mucus cells within a salivary gland during fixation of the tissue tends to compress adjacent serous cells into a half-moon shaped "cap" at the end of a mixed secretory acinus. See 2-16.

3. A major protein component of the basal lamina of an epithelium is:
  - a. Heparin
  - b. Keratin
  - c. Tubulin
  - d. Type II collagen
  - e. Type IV collagen

ANS: E

Type II collagen is found only in cartilage, whereas type IV collagen is found in all basal laminae. Keratin and tubulin are intracellular and not extracellular proteins. See 2-12.

4. Casein is a major protein produced by cells in:
  - a. Eccrine sweat glands
  - b. Mammary glands

- c. Mucus-type salivary acini
- d. Serous-type salivary acini
- e. The exocrine pancreas

ANS: B

Casein is a protein found only in milk. See 2-19.

5. A simple squamous epithelium is specialized for:
- a. Adaptation to rapid changes in the volume of a hollow organ
  - b. Diffusion of molecules between a lumen and underlying connective tissue
  - c. Movement of mucus within the respiratory system
  - d. Protection of underlying connective tissue from abrasion or desiccation
  - e. Secretion of proteins into a lumen

ANS: B

The thin cytoplasm of flat, simple squamous cells enhances the diffusion of molecules across this epithelium. See 2-2.

6. A stratified cuboidal epithelium is found in which location?
- a. Eccrine sweat glands
  - b. Lining blood vessels
  - c. Lining the trachea
  - d. Lining the urinary bladder
  - e. Surface of the skin

ANS: A

The epithelium surrounding sweat glands is a mixture of myoepithelial cells and cuboidal cells that form a stratified cuboidal epithelium. See 2-9.

7. In certain epithelial cells, the plasma membrane has a scalloped contour and contains many rigid membranous plaques. In which type of epithelium can such cells be found?
- a. Simple cuboidal epithelium
  - b. Simple columnar epithelium
  - c. Simple squamous epithelium
  - d. Stratified squamous epithelium
  - e. Transitional epithelium

ANS: E

In transitional epithelium, the superficial cells must drastically flatten out when the urinary bladder fills with urine and increases its volume. These cells must suddenly acquire extra plasma membrane to accommodate this change in cell shape. Extra membrane is added in the form of plaques that otherwise are stored in the cytoplasm in vesicles, which have the ability to fuse to the plasma membrane. See 2-11.

8. A brush border of microvilli, specialized for the active transport of small molecules across transporter proteins in the cell membrane, is typically found in which type of epithelium?
- a. Pseudostratified columnar epithelium
  - b. Simple columnar epithelium
  - c. Simple squamous epithelium
  - d. Stratified squamous epithelium
  - e. Transitional epithelium

ANS: B

Simple columnar epithelial cells, e.g., in the intestine or gallbladder, frequently possess a brush border of microvilli that enhances active absorption of molecules from the lumen. See 2-5.