

What is Epithelial Tissue?

Worksheet

Epithelial tissue is a sheet of tightly packed cells that lines body surfaces, cavities, and organs, providing protection, secretion, absorption, and filtration with little intercellular material.

Questions

1. Which cell shape is best suited for rapid diffusion?
 - A) Squamous
 - B) Cuboidal
 - C) Columnar
 - D) Transitional
2. Where would you most likely find stratified squamous epithelium?
 - A) Lung alveoli
 - B) Kidney tubules
 - C) Skin epidermis
 - D) Blood vessel lining
3. What structure anchors epithelial tissue to underlying connective tissue?
 - A) Basement membrane
 - B) Sarcolemma
 - C) Myelin sheath
 - D) Extracellular matrix fibers
4. Which function is NOT typically performed by epithelial tissue?
 - A) Secretion
 - B) Absorption
 - C) Contraction
 - D) Protection
5. Identify the epithelial type: a single layer of flat cells lining blood vessels and air sacs in the lungs, ideal for rapid diffusion.
6. Which epithelial type protects the outer layer of skin from abrasion and pathogens?
7. The lining of the stomach secretes mucus and digestive enzymes. What shape and arrangement of epithelium would you expect?
8. Define: What is epithelial tissue?
9. Define: Name the four main functions of epithelial tissue.
10. Define: What is the basement membrane?

Answer Key

1. A) Squamous - Squamous cells are flat and thin, minimizing the diffusion distance.
2. C) Skin epidermis - Skin needs multiple layers of flat cells for protection against abrasion.
3. A) Basement membrane - The basement membrane is a thin fibrous layer that attaches epithelium to connective tissue below.
4. C) Contraction - Contraction is a function of muscle tissue, not epithelial tissue.
5. This tissue must allow fast diffusion, so the cells should be thin. A single layer of flat cells matches this description. Answer: Simple squamous epithelium.
6. Skin is exposed to constant friction, so it needs many layers. Multiple layers of cells are called stratified epithelium. Since skin cells are flattened at the surface, the answer is stratified squamous epithelium.
7. Secretion requires cells with room for organelles like the Golgi apparatus. Tall, column-shaped cells provide this space. A single layer of tall cells is called simple columnar epithelium.
8. A sheet of closely packed cells covering body surfaces and lining cavities/organs, with minimal extracellular matrix.
9. Protection, secretion, absorption, and filtration/sensation.
10. A thin extracellular layer that anchors epithelial cells to underlying connective tissue.

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