

Epithelial tissue (classification according to the function))

Classification of Epithelial Tissue according to functions:

1. **Protection:** This function involves physically covering and lining surfaces, whether it's the exterior body surface like the skin or the internal cavities of the body, such as the urinary bladder (transitional epithelium). Epithelial tissues also act as selective barriers that can either facilitate or inhibit the passage of specific substances.
2. **Secretion:** Some epithelial tissues, like those found in sweat glands or the columnar epithelium of stomach and gastric glands, are involved in secreting substances.
3. **Absorption:** Certain epithelial tissues, such as those in the proximal convoluted tubules of the kidney, are responsible for absorbing nutrients into the body.
4. **Transportation:** Epithelial tissues facilitate the transportation of materials or cells along their surface, often through the use of motile cilia. They can also transport materials across the epithelium to and from the underlying connective tissue. For example, ion-transporting functions like the sodium-potassium pump or modifications of the basal cell surface are involved in this process.
5. **Sensation:** Some epithelial tissues are specialized to receive and transduce external stimuli. This includes taste buds in the tongue, the olfactory epithelium in the nasal mucosa, and the rods and cones in the retina of the eye. Sensory hair cells in the inner ear also play a role in sensing mechanical stimuli.
6. **Myoepithelial:** These cells have contractility and contain actin and myosin myofilaments. They surround glandular cells in structures like the salivary gland, eccrine (merocrine) and apocrine exocrine glands in the skin (such as sweat glands), mammary glands, and the dilatator pupillae muscle.
7. **Germinal:** In males, the germinal epithelium is the innermost layer of the testicle, also known as the wall of the seminiferous tubule, where spermatozoa are produced. In females, the ovarian surface epithelium covers the ovary and is involved in reproductive processes.
8. **Respiratory:** This type of epithelium lines the respiratory tract, providing moisture and protection to the airways while acting as a barrier against pathogens and foreign particles. It is characterized by ciliated pseudostratified columnar epithelium.

References

- JUNQUIERA, Anthony - MESCHER, . *Junqueira's Basic Histology*. 16. edition. McGraw Hill LLC, 2001. 576 pp. ISBN 1260462978.