

Epithelia

Epithelial tissues can be described as sheet-like structures that line external and internal structures

Where are epithelia found?

- Line the outside of the human body (skin)
- Line internal cavities and lumen of bodies

85% of human cancers originate from cells of epithelial origin.

Epithelial cells divide very frequently

CF is a disease of epithelial tissue

Functions of epithelia

- **Protection** (covering and lining, protection from the external environment, prevents dessication)
- **Secretion** (lining of glands)
- **Absorption**
- **Filtration**
- **Exchange**
- **Sensation**

Epithelial Cell Characteristics

Epithelial layers are attached to the extracellular matrix of the **basal lamina**

Basal lamina underlies all epithelial cells

Epithelial cells contain specialized structure that link the cells to one another and the basal lamina:

- **Tight junction**
- **Anchoring junction**
- **Channel forming functions**

Tight junctions

- **Tight junctions** or **occluding junctions** are formed by membrane proteins that seal adjacent cells together ensuring molecules cannot leak freely between cells
- Also prevent lateral migration of membrane proteins
- This creates distinct cell membrane domains generating **cell polarity**
- Tight junction prevents movement of substances between the cells

