

The importance of biological membranes - Key concepts



- **Biological membranes** are found in plant and in animal cells; they surround the cytoplasm and as internal membranes they form many of the cell organelles that partition cells. Biological membranes control the passage of substances. Membranes must be fluid to work properly.
- **Membrane models** have evolved to fit new data. In the current membrane model, the fluid mosaic model, the membrane is a mosaic of dispersed individual proteins floating in a fluid bilayer of phospholipids. Carbohydrates linked to the proteins and lipids are important for cell-cell recognition.
- A membrane's molecular organization results in **selective permeability**.
- Passive transport is **diffusion** across a membrane.
- **Osmosis** is the passive transport of water.
- Specific proteins facilitate the **passive transport** of selected solutes.
- **Active transport** is the pumping of solutes against their gradients; usually ATP provides the energy for the membrane proteins that perform the active transport.

