

TOPIC 2.4- Plasma Membranes

Cells have membranes that allow them to establish and maintain internal environments that are different from their external environments.

1. Describe the roles of each of the components of the cell membrane in maintaining the internal environment of the cell.

~circle/highlight the correct choice in the following statements~

- Phospholipids have both hydrophilic and hydrophobic regions.
- The **(hydrophobic/hydrophilic)** phosphate regions of the phospholipids are oriented toward the aqueous external or internal environments.
- The **(hydrophobic/hydrophilic)** fatty acid regions face each other within the interior of the membrane.
 - a. Illustrate a phospholipid bilayer below, paying attention to the orientation of the hydrophilic 'heads' and hydrophobic 'tails':

- Embedded proteins can be hydrophilic, with charged and **(polar/nonpolar)** side groups, or hydrophobic, with **(polar/nonpolar)** side groups.

2. Describe the Fluid Mosaic Model of cell membranes.

- Cell membranes consist of a structural framework of phospholipid molecules that is embedded with proteins, steroids (such as cholesterol in eukaryotes), glycoproteins, and glycolipids that can flow around the surface of the cell within the membrane.
 - a. Describe what the Fluid Mosaic Model is in your own words:
 - b. What is the role of each of the following in the plasma membrane?
 - i. Proteins:
 - ii. Cholesterol:
 - iii. Glycoproteins:
 - iv. Glycolipids:
 - c. Draw a plasma membrane with embedded proteins, steroids, glycoproteins, and glycolipids: