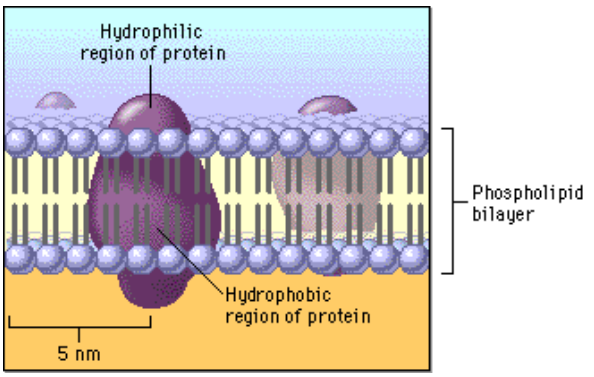
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Cell Membranes

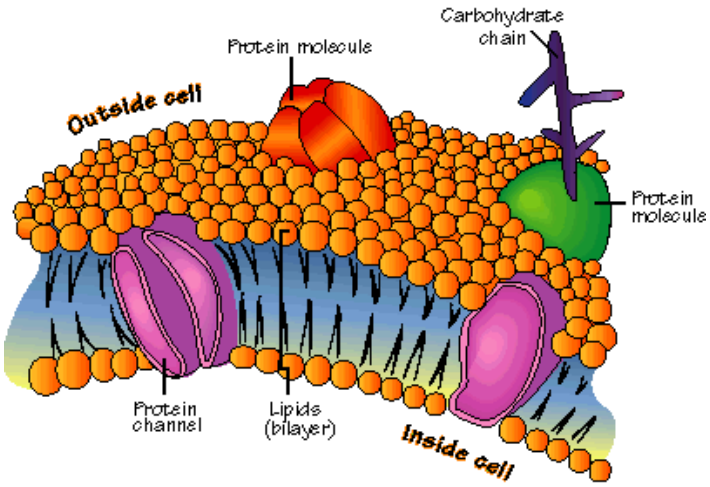
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Introduction of Cell Membrane:



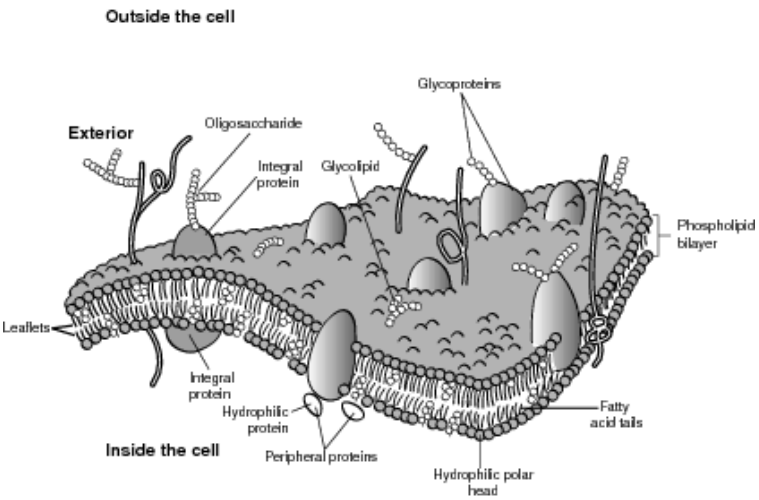
Thecell membrane or plasma membrane is an important component of the cell. It is called a selectively permeable membrane as it regulates entry of materials in and out of the cell. It is a phospholipid bilayer as is proved by Fluid Mosaic Model.Phospholipids have hydrophilic and hydrophobic fatty acid regions. The physical properties of phospholipids account for membrane assembly and many of its properties. Ions, hydrophilic molecules which are larger than water, and molecules like proteins do not move through the membrane on their own.

Structure of Cell Membrane



The plasma membrane consists of lipids and proteins and the vital structure of the membrane is the phospholipids bilayer that forms a stable barrier between two liquid compartments.
Plasma membrane compartments have inside and the outside of the cell. Proteins are embedded within the phospholipids bilayer and carry outside the specific functions of the plasma membrane, including transport of molecules and cell-cell recognition.

Fluid Mosaic Model



The arrangement of the phospholipid layer is special. Most cells have aqueous environment on each side. Water attracts the polar phosphate ends of the phospholipids. Phospholipids align to form double layer membrane, with polar ends on outside of each layer of the membrane. Non-polar tails are inside the bilayer. Proteins are embedded in the phospholipid bilayer. Protein molecules on the membranes and protein molecules in the membrane form patterns or mosaics. Since the membrane is fluid like and there is a pattern of mosaic formed of the proteins scientists call the modern view of the membrane structure the fluid mosaic model. The pattern keeps changing.

Types of Proteins on the Cell Membrane:

There are a lot of protein molecules in the layer. They are attached to the cell membrane. They are calledperipheral proteins . They are embedded in the lipid layers and are called integral proteins. The proteins are exposed to the cell's external environment. They are better known as identification badges. They have carbohydrates attached. Cholesterol proteins are also found in the membrane. They stabilize the membrane by preventing fatty acid chains from sticking to each other. It also maintains membrane fluidity.

Function of Plasma Membrane:

- Regulates the passage of materials into and out of the cell
- Receives chemical messages from other cells, e.g Hormones, Growth factors
- Protects the cell
- Helps in cell movement, secretion and in transmitting impulses

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Reference Links:

- http://en.wikipedia.org/wiki/Cell_membrane
- http://en.wikipedia.org/wiki/Phospholipid_bilayer
- http://en.wikipedia.org/wiki/Molecule
- http://en.wikipedia.org/wiki/Semipermeable_membrane
- http://www.youtube.com/watch?v=_qdJkR3Usjg

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