



Cell Membranes are Determined by the Quantity and Distribution of Membrane Proteins

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DESCRIPTION

The Cell Membrane (CM) is also called as the Plasma membrane (PM) or Cytoplasmic Membrane (CM), it is a biological membrane that separates the interior of all cells from the extracellular space and protects the cell from its environment. The Cell Membrane (CM) consists of a lipid bilayer, it is made up of layers of phospholipids with a lipid component interspersed between them, and maintaining appropriate membrane fluidity at various temperatures. The Cell Membrane (CM) is also consist of membrane proteins, which includes integral proteins that span the membrane and serve as membrane transporters, and peripheral proteins that loosely attach to the peripheral side of the cell membrane, acting as enzymes to facilitate interaction with the cell environment.

The Cell Membrane (CM) includes a lipid bilayer that is semipermeable. It is regulate the transport of materials entering and exiting the cell. Cell Membranes (CM) are composed primarily of fatty acid based on the lipids and proteins. Membrane lipids are basically two type's phospholipids and sterols. Selectively permeable to ions and organic molecules, regulates the movement of materials in and out of cells. Body membranes are thin sheets of tissue that cover the line body cavities, and cover organs in the cavities in hollow organs. They can be classified into epithelial membrane and connective tissue membrane[1-3].

The main function of the Cell Membrane (CM) or Plasma Membrane (PM) is to protect the cell from its surroundings. Composed of a phospholipid bilayer with embedded proteins, the Plasma Membrane (PM) is selectively permeable to ions and organic molecules and regulates the movement of materials in and out of cells. The cell membrane is the outer covering of the living cell, which encloses the cytoplasm and the nucleus. Plant cells and microorganism possess a cell wall outside the cell membrane. The cell membrane is selectively permeable and made of a phospholipid bilayer, along with different proteins, and carbohydrates. They provide structure for the body, take in

nutrients from food, convert those nutrients into energy, and carry out specialized functions [4].

In addition, cell membranes are involved in a various types of cell techniques including ion conductivity and mobile signaling and serve as the attachment surface for different extracellular structures, which include the cell wall and the carbohydrate layer is known as the glycocalyx, as well as the intracellular network of protein fibers is known as the cytoskeleton. In the field of synthetic biology, cell membranes can be artificially reassembled. It contains a number of biological molecules, notably lipids and proteins. Composition is not set, but constantly changing for fluidity and changes in the environment, even fluctuating during different stages of cell development. Specifically, the amount of cholesterol in human primary neuron cell membrane changes, and this change in composition affects fluidity throughout development stages [4,5].

Cell Membranes (CM) contain various types of biological molecules, significantly lipids and proteins. It is consists of 3 classes of amphipathic lipids: phospholipids, glycolipids, and sterols. The amount of each depends upon the type of cell, but in the majority of cases phospholipids are the most abundant, often contributing for over 50% of all lipids in plasma membranes. Glycolipids only account for a minute amount of approximately 2% and sterols make up the rest. In RBC studies, 30% of the plasma membrane is lipid. However, for the majority of eukaryotic cells, the composition of plasma membranes is about half lipids and half proteins through weight.

The Cell Membranes (CM) serve as barriers. They are semi-permeable membrane, which means that some molecules can diffuse across the lipid bilayer but others cannot. Small hydrophobic molecules and gases like oxygen and carbon dioxide cross membranes rapidly. Small polar molecules, including water and ethanol, can also pass through membranes, but they do more slowly. On the other hand, cell membranes restrict diffusion of highly charged molecules, which includes ions, and large molecules. The passage of these molecules is based on the specific transport proteins embedded in the membrane.

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