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DEPT : MEDICAL LABORATORY SCIENCE

1.Membrane structure

2.A fatty acid is a carboxylic acid

3.Gonane, also known as steran or cyclopentanoperhydrophenanthrene ring

The nucleus controls and regulates the activities of the cell (e.g., growth and metabolism) and 4.i)carries the genes, structures that contain the hereditary information.

ii)Endoplasmic reticulum functions in the synthesis, folding, modification, and transport of proteins, lipid metabolism and detoxification of cell.

ii)iMitochondria are known as the powerhouses of the cell. They are organelles that act like a digestive system which takes in nutrients, breaks them down, and creates energy rich molecules for the cell.

5.Chylomicrons transport lipids absorbed from the intestine to the tissues and liver .

6.Glycolipids: There are two major classes of glycolipids:-Glycoglycerolipids and glycosphingolipids,

* Glyceroglycolipids: a sub-group of glycolipids characterized by an acetylated or non-acetylated glycerol with at least one fatty acid as the lipid complex. Glyceroglycolipids are often associated with photosynthetic membranes and their functions. The subcategories of glyceroglycolipids depend on the carbohydrate attached.
  + Galactolipids: defined by a galactose sugar attached to a glycerol lipid molecule. They are found in chloroplast membranes and are associated with photosynthetic properties.
  + Sulfolipids: have a sulfur-containing functional group in the sugar moiety attached to a lipid. An important group is the sulfoquinovosyl diacylglycerolswhich are associated with the sulfur cycle in plants.
* Glycosphingolipids: a sub-group of glycolipids based on sphingolipids. Glycosphingolipids are mostly located in nervous tissue and are responsible for cell signaling.
  + Cerebrosides: a group glycosphingolipids involved in nerve cell membranes.
    - Galactocerebrosides: a type of cerebroseide with galactose as the saccharide moiety
    - Glucocerebrosides: a type of cerebroside with glucose as the saccharide moiety; often found in non-neural tissue.
    - Sulfatides: a class of glycolipids containing a sulfate group in the carbohydrate with a ceramide lipid backbone. They are involved in numerous biological functions ranging from immune response to nervous system signaling.
  + Gangliosides: the most complex animal glycolipids. They contain negatively charged oligosacchrides with one or more sialic acid residues; more than 200 different gangliosides have been identified. They are most abundant in nerve cells.
  + Globosides: glycosphingolipids with more than one sugar as part of the carbohydrate complex. They have a variety of functions; failure to degrade these molecules leads to Fabry disease.

