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1. D: Membrane structures
2. Carboxylic acid
3. Fused Ring
4. Chylomicrons transport lipids and triglycerides absorbed from the intestine

to adipose, cardiac, and skeletal muscle tissue.

1. Nucleus: The cell nucleus is that it controls the cell functions. The eukaryotic nucleus largely handles what was also handled in the RNA world. The nucleolus served as the nucleus of the compartment that is now the nucleus.

The mitochondrion: Each mitochondrion is a double membrane - bound structure with the outer membrane and the inner membrane dividing its lumen distinctly into two compartments, I.e., the outer compartment (perimitochindrial space) and the inner compartment matrix).

* They are present in almost all the cells of the body except in Red Blood Cells.
* They are freely floating in the cytoplasm and stay in the regions of high energy requirement.
* Mitochondria are self replicable i.e. they can multiply on their own without the requirement of cell to divide.
* Mitochondria have their own genetic material as single stranded DNA.
* The mitochondria have many enzyme complex which in series help in formation of energy i.e. adenosine tri-phosphate (ATP).

Endoplasmic Reticulum:

* It is mainly responsible for the transportation of proteins and other carbohydrates to another organelle, which includes lysosomes, Golgi apparatus, plasma membrane.
* They provide the increased surface area for cellular reactions.
* They help in the formation of nuclear membrane during cell division.
* They play a role in the synthesis of proteins, lipids, glycogen and other steroids like cholesterol, progesterone, testosterone, etc.
* [Galactolipids](https://en.wikipedia.org/wiki/Galactolipid): defined by a galactose sugar attached to a glycerol lipid molecule. They are found in chloroplast membranes and are associated with photosynthetic properties.
* [Sulfolipids](https://en.wikipedia.org/wiki/Sulfolipid): have a sulfur-containing functional group in the sugar moiety attached to a lipid. An important group is the [sulfoquinovosyl diacylglycerols](https://en.wikipedia.org/wiki/Sulfoquinovosyl_diacylglycerol) which are associated with the [sulfur cycle](https://en.wikipedia.org/wiki/Sulfur_cycle) in plants.
* [Glycosphingolipids](https://en.wikipedia.org/wiki/Glycosphingolipid): a sub-group of glycolipids based on [sphingolipids](https://en.wikipedia.org/wiki/Sphingolipid). Glycosphingolipids are mostly located in [nervous tissue](https://en.wikipedia.org/wiki/Nervous_tissue) and are responsible for cell signaling.
* [Cerebrosides](https://en.wikipedia.org/wiki/Cerebroside): a group glycosphingolipids involved in nerve cell membranes.
  + [Galactocerebrosides](https://en.wikipedia.org/wiki/Galactocerebroside): a type of cerebroseide with galactose as the saccharide moiety
  + [Glucocerebrosides](https://en.wikipedia.org/wiki/Glucocerebroside): a type of cerebroside with glucose as the saccharide moiety; often found in non-neural tissue.
  + [Sulfatides](https://en.wikipedia.org/wiki/Sulfatide): a class of glycolipids containing a sulfate group in the carbohydrate with a [ceramide](https://en.wikipedia.org/wiki/Ceramide) lipid backbone. They are involved in numerous biological functions ranging from immune response to nervous system signaling.
* [Gangliosides](https://en.wikipedia.org/wiki/Ganglioside): the most complex animal glycolipids. They contain negatively charged oligosacchrides with one or more [sialic acid](https://en.wikipedia.org/wiki/Sialic_acid) residues; They are most abundant in nerve cells.
* [Globosides](https://en.wikipedia.org/wiki/Globoside): 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](https://en.wikipedia.org/wiki/Fabry_disease).
* Glycophosphosphingolipids: complex glycophospholipids from fungi, yeasts, and plants, where they were originally called "phytoglycolipids". They may be as complicated a set of compounds as the negatively charged gangliosides in animals.
* Glycophosphatidylinositols: a sub-group of glycolipids defined by a phosphatidylinositol lipid moiety bound to a carbohydrate complex. They can be bound to the C-terminus of a protein and have various functions associated with the different proteins they can be bound to.

