Intracellular Components

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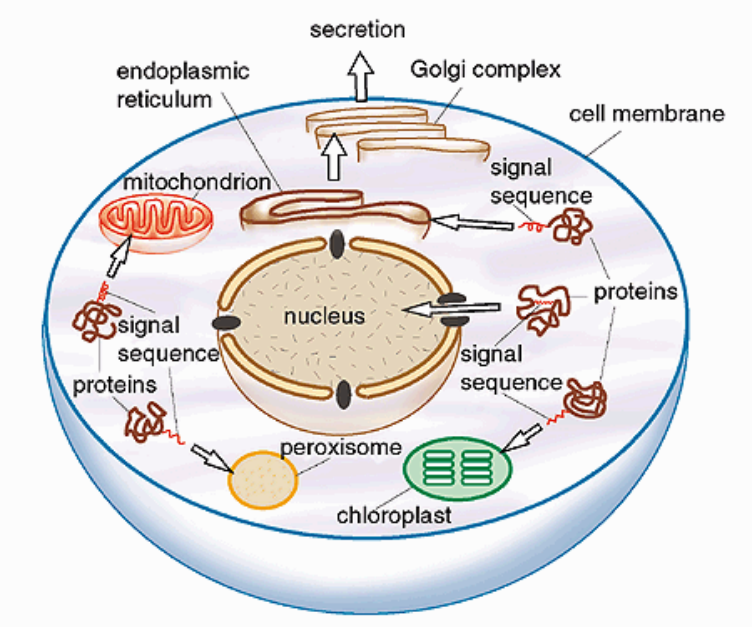
What is inside a Cell?



The cell is the structural and functional basic unit of life.Robert Hooke discovered cells, and they are known as the functional units of living organisms. They are often referred to as the building blocks and smallest units of life.

Parts of the Cell:

The different organelles of a typical cell are as follows:

1. Plasma membrane
2. Cell wall

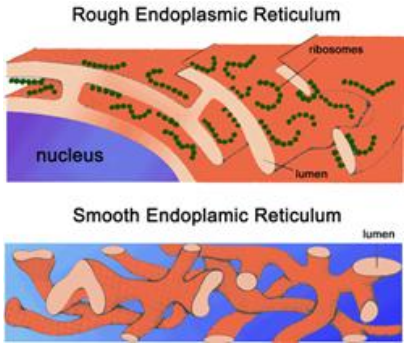
3. Ribosomes
4. Golgi apparatus (dictiosomes)
5. Cytoplasm
6. Mitochondria
7. Endoplasmic reticulum
8. Peroxisomes
9. Plastids
10. Vacuoles
11. Nucleus

Intracellular components

Cytoplasm:

- Cytoplasm is the fluid that fills a cell. Scientists used to call the fluid protoplasm.
- The fluid in the cell also called cytosol.
- The cell organelles are suspended in the cytosol.

Endoplasmic reticulum(ER)

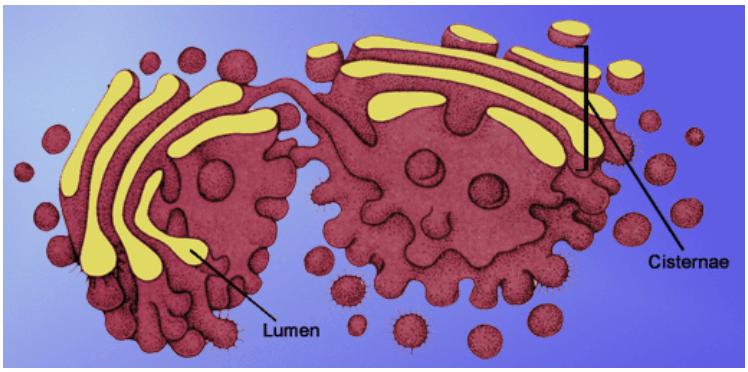


- The ER functions as a packaging system. It does not work alone. The ER works closely with the Golgi apparatus, ribosomes, RNA,mRNA, and tRNA.
- It creates a network of membranes found through the whole cell.
  The ER may also look different from cell to cell, depending on the cell's function.

Ribosomes:

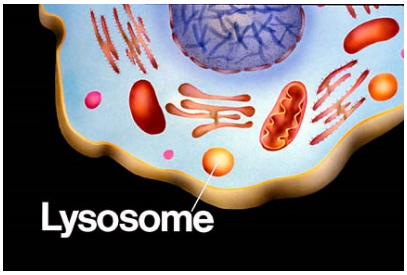
-  Ribosomes are the components of cells that make proteins from amino acids.
- Ribosomes are made from complexes of RNAs and proteins. Ribosomes are divided into two subunits, one larger than the other.
- The smaller subunit binds to the mRNA, while the larger subunit binds to thetRNA and the amino acids.

Golgibodies:



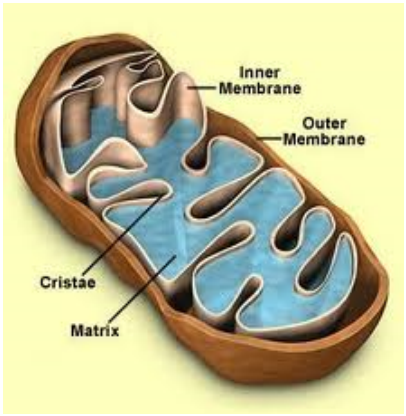
- The primary function of the Golgi apparatus is to process and package molecules, such as proteins and lipids.
- Particularly important in the processing ofproteins for secretion.

Lysosomes:



- Lysosomes digest excess or worn-out organelles, food particles, and engulfed viruses or bacteria.
- They are frequently nicknamed "suicide-bags" or"suicide-sacs".

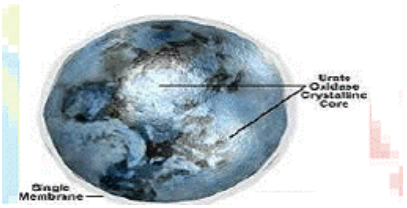
Mitochondria:



- Mitochondria are sometimes described as "cellular power plants" because they generate most of the cell's supply of adenosine triphosphate(ATP), used as a source of chemical energy.

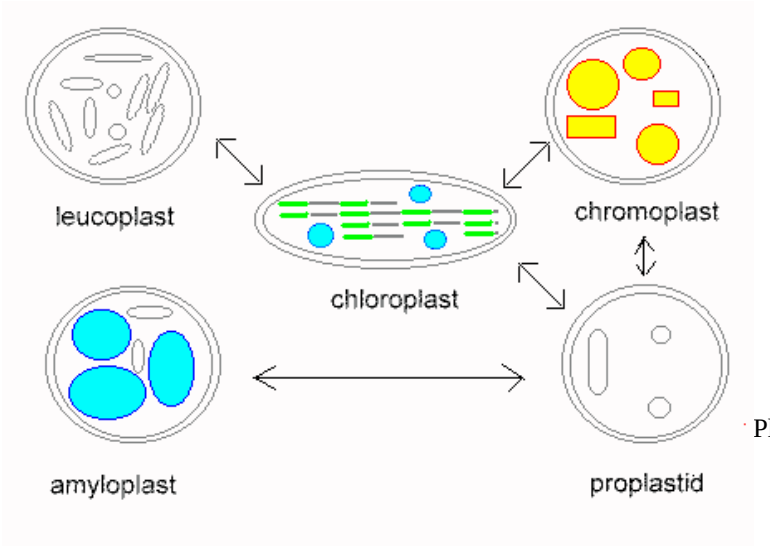
- A mitochondrion contains outer and inner membranes composed of phospholipid bilayers and proteins.

Peroxisomes:

- 

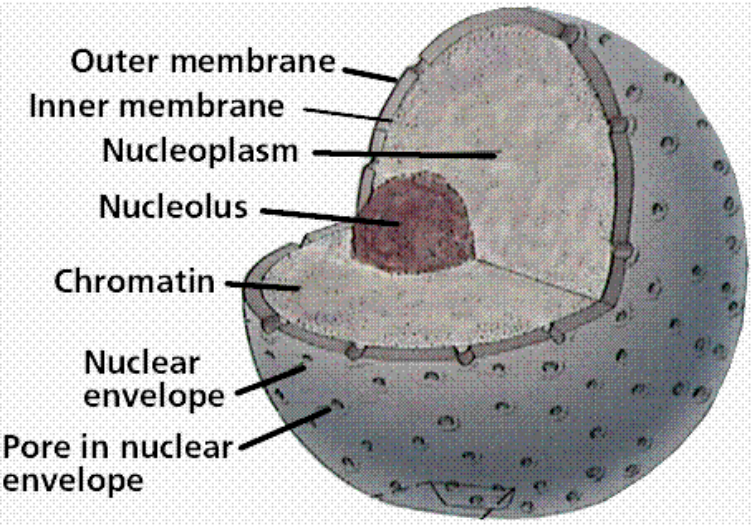
Peroxisomes are organelles present in almost all eukaryoticcells. They participate in the metabolism of fatty acids and many other metabolites.
- Contain membrane proteins critical for various functions, such as importing proteins into the organelles and aiding in proliferation

Plastids:

- 

Plastids are major organelles found in the cells of plants and algae.
- Plastids are the site of manufacture and storage of important chemical compounds used by the cell.
- Plastids often contain pigments used in photosynthesis, and the types of pigments present can change or determine the cell's color.
- Plastids are of different types named, chloroplast, chromoplast, leuco plast, amyloplast, proplastid.

Nucleus:



- The nucleolus is a dense, spherical-shaped structure present inside the nucleus. It disappears when a cell undergoes division.
- The function of nucleus is storage of hereditary material like DNA, genes chromosomes etc.
- Nucleus is used for transcription and production of ribosome also takes place in nucleus.

Nucleus

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Reference Links:

- http://en.wikipedia.org/wiki/Cell_%28biology%29
- http://en.wikipedia.org/wiki/Multicellular
- http://en.wikipedia.org/wiki/Cell_nucleus
- http://en.wikipedia.org/wiki/Lysosome
- http://www.youtube.com/watch?v=Hmwvj9X4GNY

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