

Bio molecules of cell

Chemical molecules of life consists of lifeless chemical molecules like:

1. Amino acids (forms proteins)
2. Monosachrides (forms carbohydrates)
3. Nucleotides (forms nucleic acids)
4. Major complex biomolecules of cell: proteins, deoxyribonucleic acid, ribonucleic acid, polysaccharide, Lipids.

These together constitutes various cell organelles.

Various eukaryotic cell organelles:

1. Nucleus:

- a) largest cellular organelle
- b) Sourrounded by double membrane having nuclear pores
- c) Contains DNA with protein histone
- d) Contains nucleolus (rich in RNA)

2. MITOCHONDRIA

- a) Regarded as powerhouse of cell
- b) Has double membrane system :Outer membrane is smooth, while inner membrane has cristae. Inner membrane has energy producing system associated with it
- c) Matrix has the enzymes concerned with the energy metabolism of carbohydrates, proteins and lipids.
- d) These are the principal producers of ATP in aerobic cells.

3. ENDOPLASMIC RETICULUM(ER)

- a) Factories of protein biosynthesis.
- b) Without rbosomes these are calledsmooth endoplasmic reticulum,and when studded with ribosomes ,are called rough endoplasmic reticulum
- c) Smooth ER is concerned mainly with the synthesis of lipids and rougher is mainly concerned with protein synthesis

4. GOLGI APPARATUS

- a) Membrane vescicles called dictyosomesforms golgi complex
- b) Adds lipids, carbohydrates or sulphates to proteins, which is necessary for the the transport of proteins through plasma membrane.
- c) Also involved in the membrane **synthesis of some intracellular organelles** .

5. LYSOSOMES

- a) Regarded as digestive tract of the cell.
- b) Responsible for maintaining cellular compounds in dynamic state by their degradation and recycling.

As the cell dies, lysosomal enzymes are released resulting in its autolysis.

6. PEROXISOMES

- a) Also known as microbodies.
- b) Contains enzyme catalase, which protects the cell from toxic effects of peroxides.

7. CYTOSOL AND CYTOSKELETON

- a) Cytoskeleton is formed of microtubules and actin filaments

Book:

Biochemistry by U. Satyanarayan