SCIENCE

CELL ORGANELLES (RIBOSOMES, LYSOSOMES, VACUOLES)

❖ Ribosomes

Ribosomes are extremely amall, round bodies found either in the state in the cytoplasm or attached to the surface of the ER. They are composed of ribonucleoprotein (ribonucleic acid and protein).

Functions - The main function of ribosomes is to act as a platform or work place for the synthesis of proteins.

❖ Lysosomes

These saclike, small spherical, single membrane-bound vesicles contain enzymes. These enzymes are synthesized in the RER, which are brought to the Golgi complex. Lysosomes are formed by the Golgi complex. They occur in animal cells and in the meristematic cells of a few plants.

Function- They help in breaking down (digesting) large molecules of the cell. They work in defence againt bacteria and viruses. During stavation, lysosomes act on their own cellular organelles and digest them. This results in cell death. Hence lysosomes are called suicide bags or demonlition squads.

❖ Vacuoles :

These are cytoplasmic inclusions. They are clear fluid filled or gas filled spaces. The vacuole is covered from outside by a covering called tonoplast. In animal cells, vacuoles are smaller in size and lesser in number as compared to plant cells.

Functions :

(i) They help in the storage of food, water and other waste substances.

(ii) Contractile vacuole help in the elimination of excess water from the cell.

Introduction :

(i) Vacuoles serve as temporary storehouse for many of the cell's solutes and macromolecules,

Ultrastructure :

(ii) Vacuoles - The Vacuoles are liquid filled spaces in the cell.

(iii) Each vacuole remains surrounded by a membrane called tonoplast.

q Functions of Vacuoles :

(i) Vacuoles help to maintain the osmotic pressure in a cell (osmoregulation).