

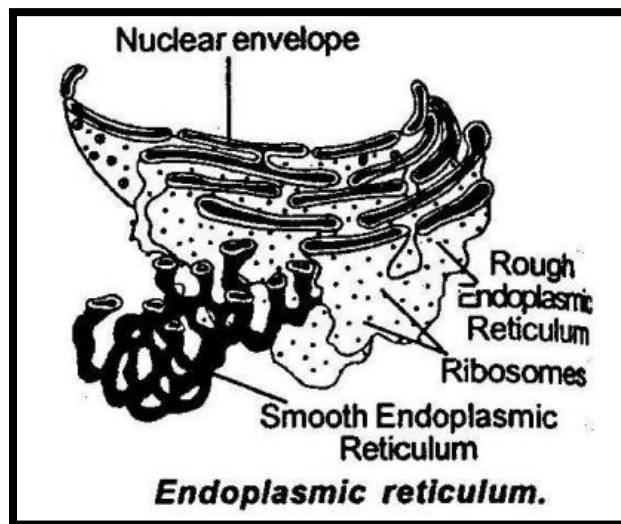
The Fundamental Unit of Life

Cell organelles (Endoplasmic Reticulum)

❖ Endoplasmic Reticulum:

It is an irregular, inter-connected network of flattened sacs made up of double membrane and are interconnected with each other.

It is of two types : rough Endoplasmic Reticulum (RER), and Smooth Endoplasmic Reticulum (SER).



Introduction:

- (i) In the cytoplasm some closed or open, branched cavities are present which are bounded by membranes to form a network of membranous system called **Endoplasmic Reticulum**.

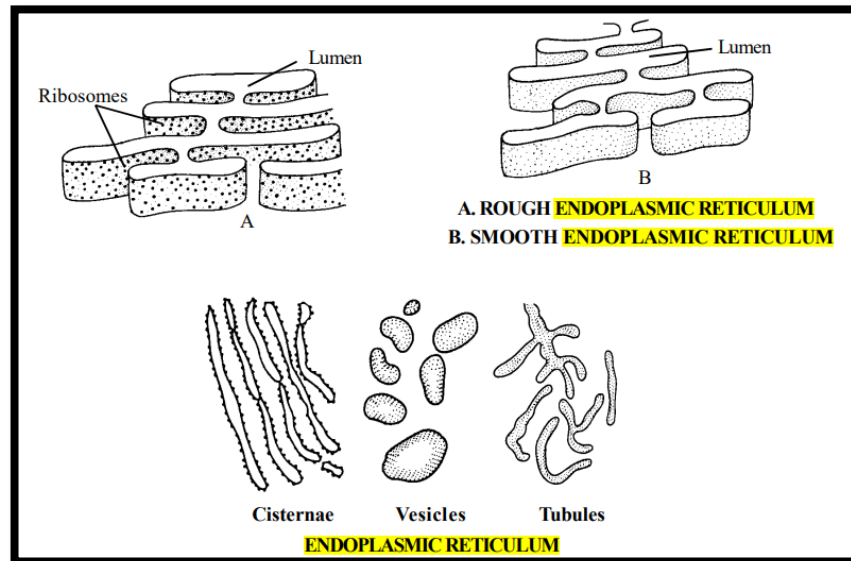
Historical Account:

- (i) **K.R.Porter** (1948) reported this net-like system under electron microscope.

Ultrastructure:

- (i) A system of membranes attached to the nucleus and present in the cytoplasm is called E.R.
- (ii) The Endoplasmic Reticulum (ER) is divided into two parts
 - (a) **Rough Endoplasmic Reticulum (RER)**
 - (b) **Smooth Endoplasmic Reticulum (SER)**

- (i) RER possesses rough wall because ribosomes remain attached on the surface. **RER** is present in cells which are involved in protein synthesis.
- (ii) **SER** mainly present in cells which are involved in lipoproteins and glycogen synthesis. It performs **detoxification**.



q Functions of Endoplasmic Reticulum :

- (i) It forms supporting skeleton framework of the cell.
- (ii) Certain enzymes present in smooth E.R. synthesis fats (lipids), steroids and cholesterol.
- (iii) Rough E.R. is concerned with protein synthesis.
- (iv) Smooth E.R. is involved in the process of detoxification.