

The Fundamental Unit of Life

Structure Of Nucleus

❖ Nucleus :

Introduction :

- (i) The nucleus is the most important component of the cell and controls all functional activities of the cell.

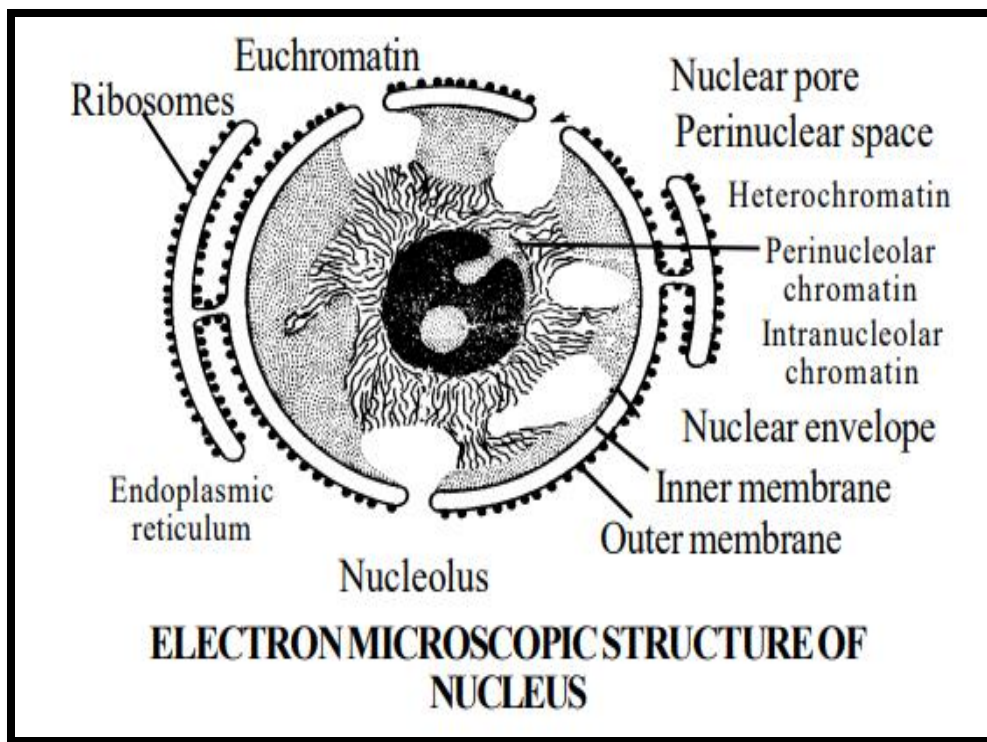
Historical Account :

- (i) **Robert Brown** (1831) discovered a dense, spherical body in the cells of an 'orchid' and named it as 'Nucleus'.

Ultrastructure :

- (i) It is a prominent, spherical or oval structure, usually located near the centre of cell.
- (ii) It is the controlling centre of all cell activities.
- (iii) It is enclosed by a double layered membrane called nuclear membrane.
- (iv) The chief components of the nucleus are
 - (a) Chromatin material
 - (b) Nucleolus
- (v) **Chromatin material** - Which is in the form of an intertwined mass of thread like structure.
- (vi) Chromatin material mainly consist of DNA.
- (vii) DNA responsible for hereditary information from one generation to another.
- (viii) Double Helical structure of DNA was proposed by Watson & Crick.
- (ix) **Chromosomes** - DNA condenses into compact rod like bodies called chromosomes.

Their number in humans is 46 (23 pairs,)



q Functions of Nucleus :

- (i) The nucleus control all metabolic activities of the cell.
- (ii) It regulates the cell cycle.
- (iii) It is concerned with the transmission of hereditary traits from the parents to offspring.