

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

Class 11<sup>th</sup>

Subject BIOLOGY

DATE:- 17.02.21

### **Nucleus**

It is a specialised and principle cell organelle of the cell, which contains all the genetic information for controlling all essential processes related to metabolism and transmission.

Nucleus was first described by Robert Brown as early as 1831.

Later the name chromatin was given by Flemming when the material of the nucleus was stained by the basic dyes.

Nucleus is known to be the largest cell organelle also known as brain of the cell.

### **Occurrence**

A nucleus is known to be present in all eukaryotic cells except a few cell types such as RBCs of humans, sieve cells of vascular plants, etc.

Prokaryotic cell lack a well organised nucleus, instead they have a nucleoid.

### **Ultrastructure**

The interphase nucleus (nucleus of a cell when it is not dividing) has highly extended and elaborate nucleoprotein fibres called chromatin, nuclear matrix and one or more spherical bodies called nucleoli.

### **Microscopic Structure**

It has been revealed from the studies of electron microscopy that the nuclear envelope, consists of two parallel membranes with a space between 10-50 nm called the perinuclear space, which forms a barrier between the materials present inside the nucleus and that of the cytoplasm.

The outer membrane usually bears ribosomes on it and remains continuous with the endoplasmic reticulum. The nuclear envelope is interrupted by minute nuclear pores, at a number nuclear of places, which are produced by the fusion of its two membranes. These nuclear pores are the passages through which movement of RNA and protein molecules takes place in both directions between the nucleus and the cytoplasm.

Normally, there is only one nucleus per cell, but variations in the number of nuclei can also be seen in various organisms.