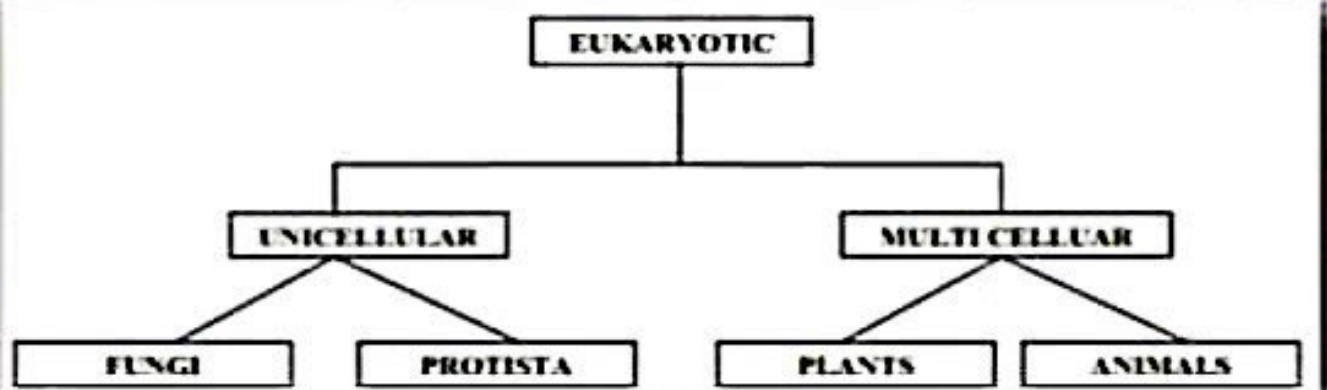


TYPES OF EUKARYOTIC CELL





General Definition

- ❖ **The nucleus is the genetic control center of a eukaryotic cell.**
- ❖ **In most cells, there is only one nucleus. It is spherical, and the most prominent part of the cell, making up 10% of the cell's volume.**
- ❖ **It has a unique structure and function that is essential the cell.**

Introduction

- ❖ Prominent & Characteristic features
- ❖ 'Eukaryon' means 'true nucleus'
- ❖ Very essence of eukaryote – membrane bounded nucleus
- ❖ Imp functions:
 - Physically separates DNA from the cytoplasm's complex metabolic machinery
 - Nuclear membrane serve as boundary

Ultrastructure Of Nucleus

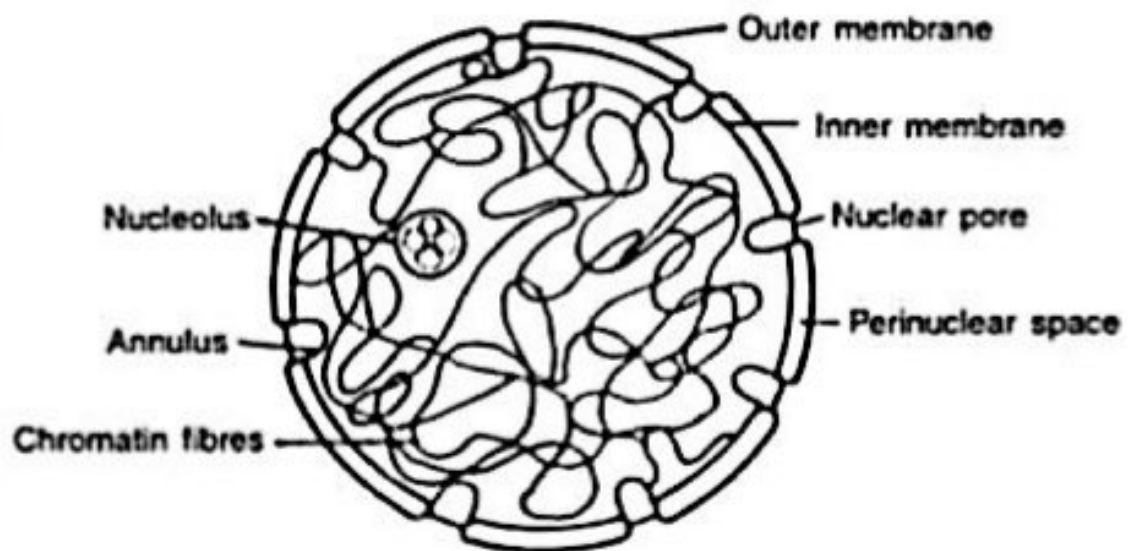
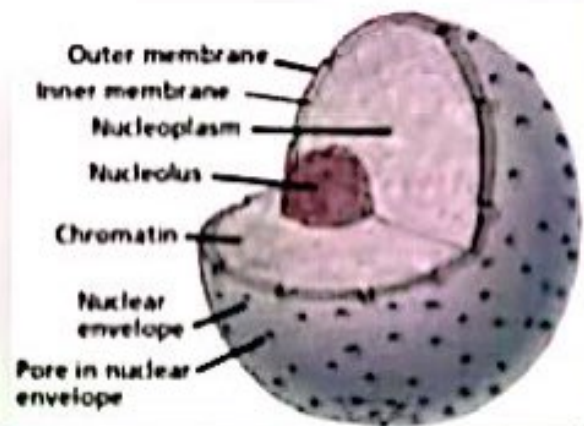


Fig. 2.1. Ultrastructure of Nucleus.

Components of Nucleus

Average diameter of nucleus is 6 μm , which occupies around 10% of cell volume.

1. Nuclear Envelope – pore riddled
2. Nucleoplasm – Fluid interior portion
3. Nucleolus – Dense cluster of RNA & Proteins – ribosomes
4. Chromatin – all DNA + Proteins

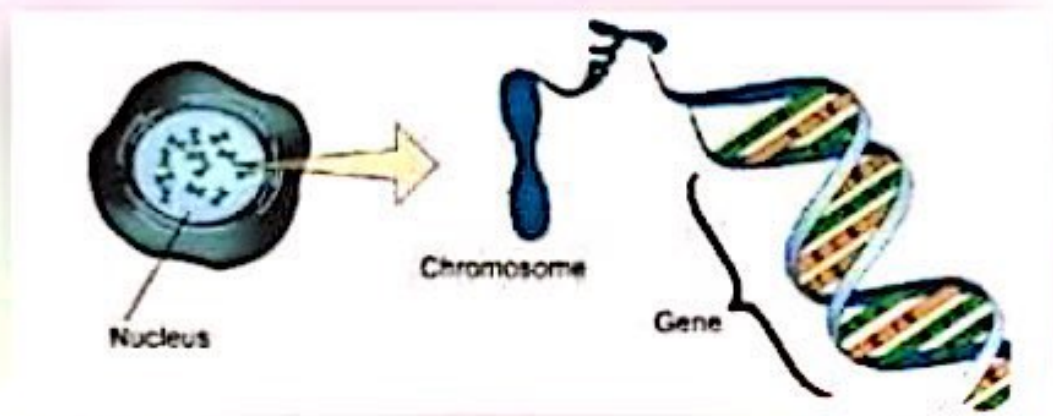


Presentation Overview

- ❖ Introduction
- ❖ Types of cell
- ❖ Components of Nucleus
 - The Nuclear Envelope
 - The Nucleoplasm
 - The Nucleolus
 - Chromatin/Molecular structure of chromosome
- ❖ Function of nucleus
- ❖ Reference

Function of chromosome

- ❖ It controls the activities of cell
- ❖ Information in the form of genes is located on chromosomes
- ❖ Control inheritance and metabolism



Function Of Nuclear Membrane

- ❖ **Shape And Stability:** Helps The Nucleus From Collapsing
- ❖ **Compartmentalizing:** Separates The Nuclear Material From Cellular Material
- ❖ **Regulation Of Substances:** Allow The Exchange Of Materials
- ❖ **Communication:** Develops A Chemical Connection Between Nucleus And Cell

The Nuclear Pore

- ❖ Most distinctive feature of NE
- ❖ Small cylindrical channels –direct contact b/w cytosol & Nucleoplasm
- ❖ Readily visible – freeze fracture microscopy
- ❖ Mammalian nucleus – 3000 to 4000 pores
- ❖ Inner & outer membranes fused
- ❖ Structural complexity – control transport of key molecules