

Chhatrapati Shahu Ji Maharaj University, Kanpur

CELL STRUCTURE (CELL BIOLOGY- BBT-1002)

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LEARNING OUTCOMES

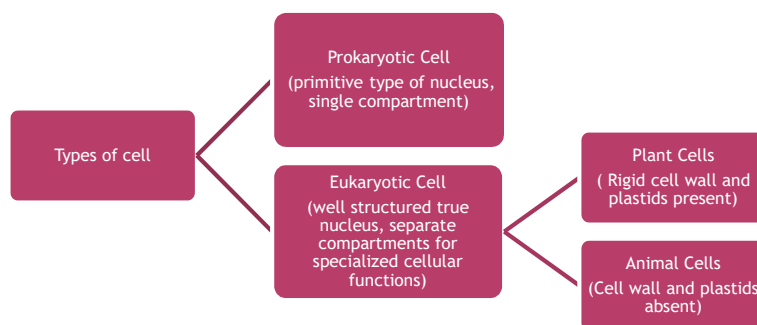
- The learner will be able to understand basic structure of cell.
- Learner be apprised of types of cells.
- Learner will be able to appreciate the evolution of cell from simple prokaryote to highly compartmentalized eukaryote.

STRUCTURES SHARED BY ALL CELLS

- ◉ Although cells are diverse, all cells have certain parts in common. These parts include a
- ◉ plasma membrane, cytoplasm, , ribosomes, and DNA.
- ◉ The **plasma membrane** (also called the cell membrane) is a thin coat of phospholipids that surrounds a cell. It forms the physical boundary between the cell and its environment, so you can think of it as the “skin ” of the cell.
- ◉ **Cytoplasm** refers to all of the cellular material inside the plasma membrane. The Cytoplasm is made up of a watery substance called cytosol and contains other cell structures such as ribosomes.
- ◉ **Ribosomes** are structures in the cytoplasm where proteins are made.
- ◉ **DNA** is a nucleic acid found in cells. It contains the genetic instructions that cells need to make proteins.
- ◉ These parts are common to all cells, from organisms as different as bacteria and human beings.

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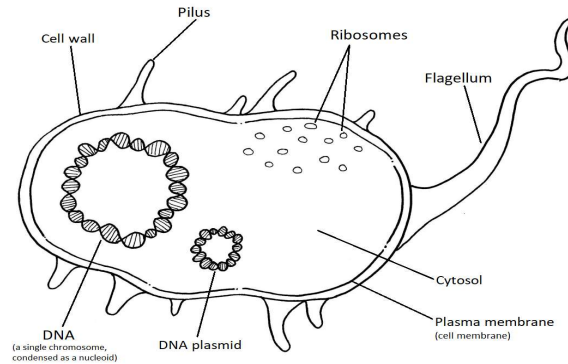
CLASSIFICATION OF CELL



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PROKARYOTIC CELLS

- ◉ Examples - Organisms of Archaeobacteria and Eubacteria domain.

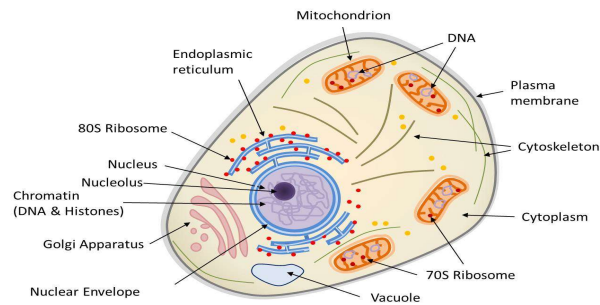


Structure of a Typical Prokaryotic Cell

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EUKARYOTIC CELLS

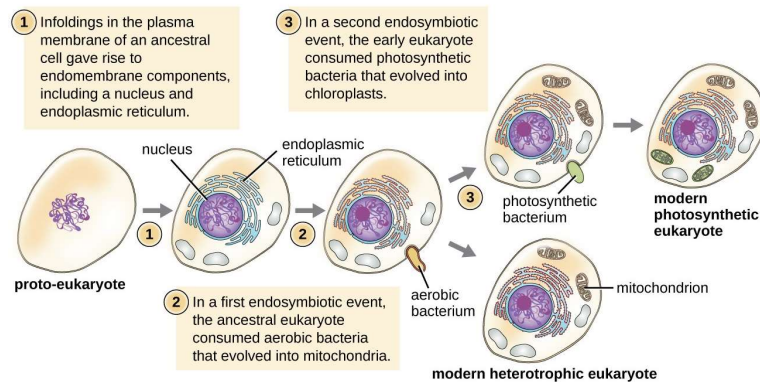
- ◉ Examples -multicellular organisms (animals, plants, fungi) and some unicellular organisms (protozoa, for example).



Structure of Typical Eukaryotic Cell

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COMPARTMENTALISATION IN EUKARYOTIC CELLS



The Endosymbiotic Theory of evolution of organelles/specialised compartments in cell

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REFERENCES AND FURTHER READINGS

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