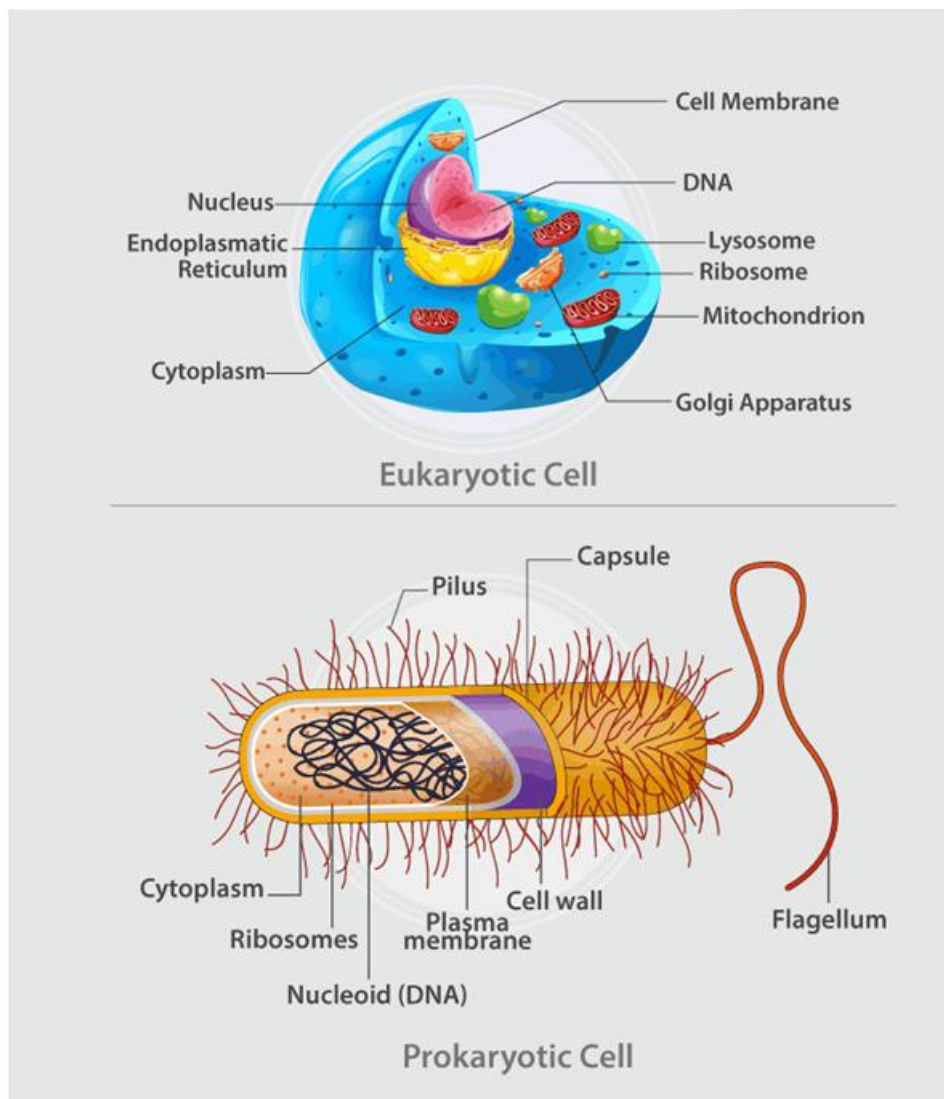


Prokaryotic and Eukaryotic Cell



The cell is the basic functional and structural unit of life. Cell plays a vital role in all biological activities and include membrane-bound organelles, which perform several individual functions to keep the cell alive and active.

What is a Prokaryotic cell?

A prokaryotic cell is a primitive type of cell that is characterized by the absence of a nucleus. Furthermore, prokaryotes do not possess membrane-bound cellular organelles. Prokaryotes are exclusively unicellular.

What is a Eukaryotic cell?

Eukaryotic cells are cells that possess a true nucleus along with membrane-bound organelles. Eukaryotes can either be unicellular or multicellular.

What is the difference between Prokaryotic and Eukaryotic cell?

The defining characteristic feature that distinguishes between prokaryotic and eukaryotic cell is the nucleus. In prokaryotic cells, the true nucleus is absent, moreover, membrane-bound organelles are present only in eukaryotic cells.

Other major differences between prokaryotic and eukaryotic cells are that prokaryotic cells are exclusively unicellular, while the same does not apply to eukaryotic cells.

List out the unique features of Animal and Plant Cells.

Both animal and plant cells have several unique features. Listed below are some important features:

- In structure, both animal and plant cells are quite similar.
- Both possess nucleus and plasma membrane, a selectively permeable membrane of the cell.
- Both animal and plant cells include membrane-bound organelles with their specialized functions.
- Animal and plant cells have vacuoles, which serve as the storage unit and maintain the shape of the cell.
- Mitochondria is the powerhouse of the cell. It stores and provide energy for different cellular activities and is found both in both animal and plant cells.

Difference between Prokaryotes and Eukaryotes cell

Prokaryotes	Eukaryotes	
Type of Cell	Always unicellular	Unicellular and multi-cellular
Cell size	Ranges in size from 0.2 μm – 2.0 μm in diameter	Size ranges from 10 μm – 100 μm in diameter
Cell wall	Usually present; chemically complex in nature	When present, chemically simple in nature
Nucleus	Absent. Instead, they have a nucleoid region in the cell	Present
Ribosomes	Present. Smaller in size and spherical in shape	Present. Comparatively larger in size and linear in shape
DNA arrangement	Circular	Linear
Mitochondria	Absent	Present
Cytoplasm	Present, but cell organelles absent	Present, cell organelles present
Endoplasmic reticulum	Absent	Present
Plasmids	Present	Very rarely found in eukaryotes
Ribosome	Small ribosomes	Large ribosomes
Lysosome	Lysosomes and centrosomes are absent	Lysosomes and centrosomes are present
Cell division	Through binary fission	Through mitosis
Flagella	The flagella are smaller in size	The flagella are larger in size
Reproduction	Asexual	Both asexual and sexual
Example	Bacteria and Archaea	Plant and Animal cell

