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### **Structural Outline of a Cell**

The onion cell, which is a typical plant cell has a distinct cell wall as its outer boundary and just within it is the cell membrane. The human and animal cell has an outer membrane, inside which is a dense membrane bound structure called nucleus. Each cell consists of

(i) Nucleus, the central part of the cell, which is spherical in shape. Its number can be one or more per cell. It is denser than the surrounding cytoplasm.

The nucleus is composed of chromosomes (contains the genetic material, i.e., DNA), nuclear membrane and centrioles (non-membrane bound organelle present in only animal cells, which helps in cell division).

(ii) Cytoplasm, a semi-fluid matrix that occupies the volume of the cell. It is mainly composed of water with free floating molecules.

Inside the cytoplasm all cellular activities like gaseous exchange, elimination of wastes, hereditary mechanisms, etc occur.

Eukaryotic cells also contain other cell membrane bound distinct structures called cell organelles, like mitochondria, vacuoles, Endoplasmic Reticulum (ER), Golgi complex, etc.

The prokaryotic cells lack all these membrane bound organelles. It is to be noted that as ribosomes are not bounded by membrane and are found in all cells.

Ribosomes are also found in chloroplasts (in plants) and mitochondria and on rough ER other than cytoplasm.

### **Types of Cell**

On the basis of the organisation, complexity and variety, all cells can be grouped into two types, i. e., prokaryotic cells and eukaryotic cells.

#### **Prokaryotic Cell**

Cell which do not have a nuclear membrane and other membrane bound organelles, is called prokaryotic cell.

#### **Occurrence**

Prokaryotic cells are placed in kingdom-Monera. These cells are represented by bacteria, cyanobacteria (blue-green algae), mycoplasma or PPLO. Bacteria are the simplest and common most type of organism amongst prokaryotes. They are generally smaller and multiply more rapidly than the eukaryotic cell.

The bacteria are found in almost every place like deep in the soil, human intestine, deep in seawater, etc.