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Biology Lab

((Eukaryotic Cell Structure))

Lab/3

1 stage

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What are cell ?

cell, in biology, the basic membrane-bound unit that contains the fundamental molecules of life and of which all living things are composed. A single cell is often a complete organism in itself, such as a bacterium or yeast. Other cells acquire specialized functions as they mature. These cells cooperate with other specialized cells and become the building blocks of large multicellular organisms, such as humans and other animals. Although cells are much larger than atoms, they are still very small. The smallest known cells are a group of tiny bacteria called mycoplasmas.

All living things are constructed of cells ; at least one (unicellular) or many (multicellular) ,Cell Theory , the very basic scientific truths about life and it is smallest units ,goes follows:

- 1-All organisms are composed of one or more cell
- 2- Cells are the basic unit of structure and function in organisms
- 3-All cells come only from other cells.

Two Types of cells

All cells fall into one of the two major categories .They are either prokaryotic or eukaryotic

prokaryotes cells prokaryotes are evolutionarily ancient .These cells are simpler than eukaryotes and don't contain a nucleus or any other membrane –bound organelles



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.Modern day bacteria (Eubacteria) and bacteria –like Archaea are prokaryotic organisms .

Eukaryotic Cells Eukaryotes are more complex ,having evolved from an ancestral prokaryote ,Eukaryotic cells are the tiny units of life comprise most of the living things we are familiar with ,such as animals plants , fungi and protists (animal-like microbes) .

The eukaryotic cell has a

1- **nuclear membrane** that surrounds the nucleus, in which the well-defined chromosomes (bodies containing the hereditary material) are located.

2- **organelles**, including mitochondria (cellular energy exchangers),

3- **Golgi apparatus** (secretory device)

4- **an endoplasmic reticulum** (a canal-like system of membranes within the cell).

5- **lysosomes** (digestive apparatus within many cell types).

