



Tikrit University
College of Veterinary Medicine

Lect.2.biology

Subject name: Prokaryotic and
Eukaryotic

Subject year: First stage

Lecturer name:

Assist. Lecturer. Hanen omar

Academic Email:



SCAN ME

Lecturers link

Prokaryotic and Eukaryotic cell

Two types of cells are found in the organisms: eukaryotic and prokaryotic depending on whether cells contain membrane-bound organelles or not. Their genetic materials are enclosed by a nuclear envelope or not. Let us study through this article about the difference between eukaryotic and prokaryotic cell.

What are Prokaryotes?

According to the morphological point of view, prokaryotic cells are the most primitive cells. They do not have definite nucleus which includes bacteria and cyanobacteria (blue green algae). The chromatin bodies remain scattered inside the cytoplasm. In prokaryotes asexual division occurs, basically binary fission. Prokaryotes are smaller than eukaryotes. Do you know that the nucleus which does not have a nuclear membrane is known as nucleoid?

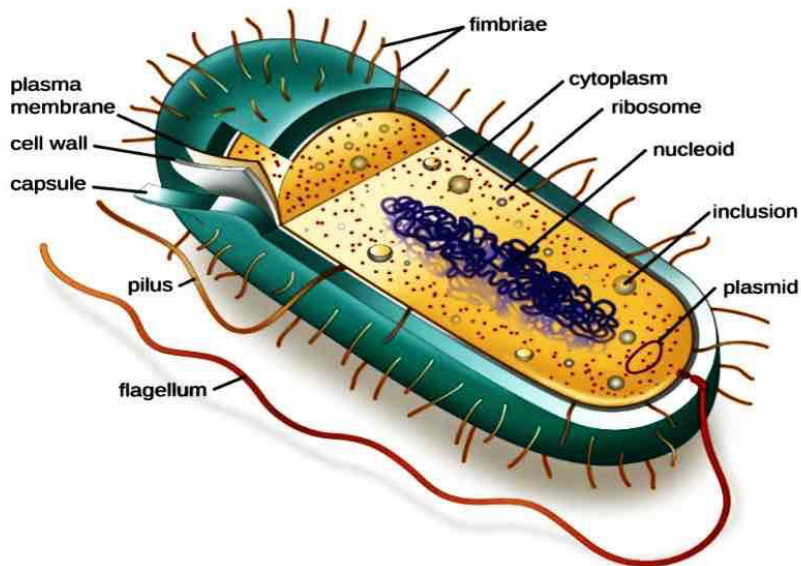
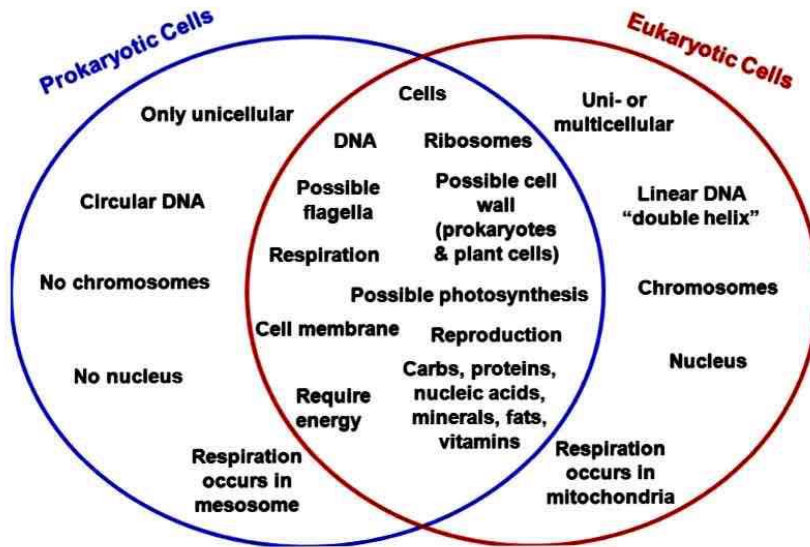
Structure of Plant and Animal Cell

What are Eukaryotes?

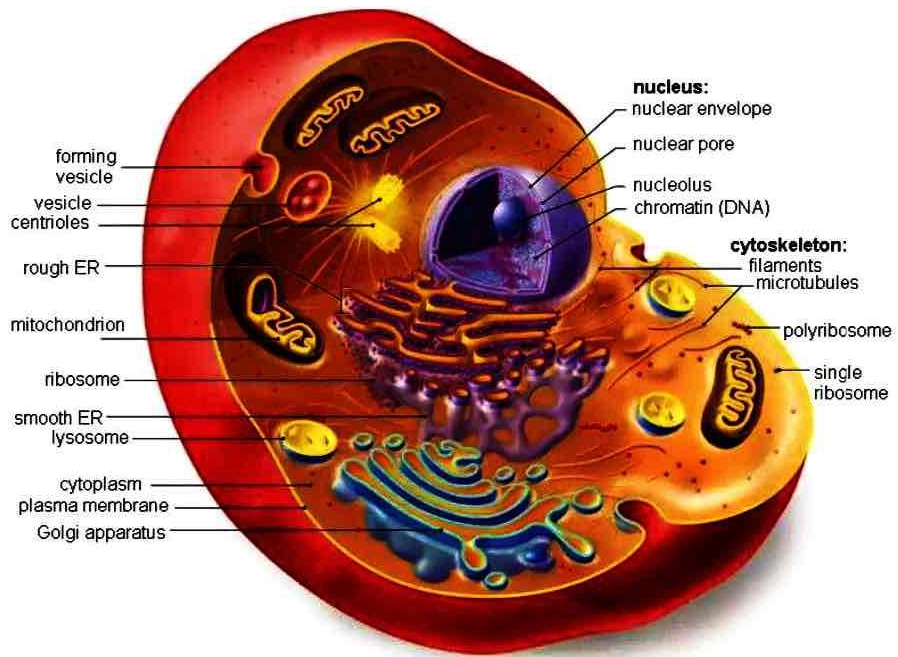
It is believed that eukaryotes have been evolved from the prokaryotes. They have been characterised by their membrane nucleus. They contain organelles like mitochondria bounded by membranes and are located in the cytoplasm. That is they contain a definite nucleus. The chromatin bodies are enclosed by a nuclear membrane. Both asexual and sexual division occur in eukaryotes. They are larger than prokaryotes and show better structural organisation and increased functional efficiency than prokaryotes.

Prokaryotic Cell	Eukaryotic cell
Size is 0.1- 5.0 um	Size is 5-100 um
Nucleus is absent	Nucleus is present
Membrane bound nucleus absent.	Membrane bound Nucleus is present.
One chromosome is present, but not true chromosome plastids	More than one number of chromosomes is present.
Unicellular	Multicellular
Lysosomes and Peroxisomes absent	Lysosomes and Peroxisomes present
Microtubules absent	Microtubules present
Endoplasmic reticulum absent	Endoplasmic reticulum present
Mitochondria absent	Mitochondria present
Cytoskeleton absent	Cytoskeleton present
Ribosomes smaller	Ribosomes larger
Vesicles present	Vesicles present
Golgi apparatus absent	Golgi apparatus present
Chloroplasts absent; chlorophyll scattered in the cytoplasm	Chloroplasts present in plants

Venn diagram: comparison of prokaryotic and eukaryotic cells



Prokaryotic cell



Eukaryotic cell