



Lab-7-Prokaryotes Cells and Eukaryotes Cells

The differences between Eukaryotic and prokaryotic cells

1. Eukaryotic cells have a true nucleus, bounded by a double membrane, Prokaryotic cells have no nucleus , most primitive , earlies form of life.
2. Eukaryotic DNA is linear , prokaryotic DNA is circular , it has no end.
3. Eukaryotic DNA is complex with proteins called “ histones ” and is organized into chromosomes , prokaryotic DNA is simple and “ necked” meaning that it has no “ histones ” associated with it and is not formed into chromosomes .
4. Eukaryotic cell contains a number of chromosomes “ multiple” , a prokaryotic cell contains only one (single) circular DNA molecule and assortment of much smaller circlet of DNA called “ plasmids ” the smaller simpler prokaryotic cell requires for fewer genes to operate than the eukaryotic cell .
5. Eukaryotic cells have many ribosomes , (80s) layer and more complex than those of prokaryotic cell (70s) (sedimentation constant) .



6. Eukaryotic ribosomes is composed of five (5) kinds of rRNA and about eighty (80) kinds of proteins , prokaryotic ribosomes are composed of only three (3) kinds of rRNA and about fifty (50) kinds of proteins .

7. Eukaryotic cells either have a plasma membrane or a cell wall in addition to the plasma membrane , prokaryotic cells have a plasma membrane in addition to bacteria cell wall.

8. Eukaryotic cells are largest cells while prokaryotic cells are smaller than eukaryotic cells , have not organelles . eukaryotic cells contain organelles with membrane bounded.

9. Eukaryotic cells reproduce by sexually with use of meiosis while prokaryotic cell don't undergo of meiosis , reproduce sexually by transfer of DNA fragments of DNA through conjugation “ plasmids ”.

10. Eukaryotic cells have a complex cytoskeletal structure while prokaryotic cells have a primitive or don't have a cytoskeletal at all.



The different between prokaryotic cell and eukaryotic cell

	Features	Prokaryotic cell	Eukaryotic cell
1	Type of cell	Unicellular	Multicellular and unicellular
2	Cell wall	Rigid made of lipids, carbohydrates, and protein.	Flexible made of cellulose .
3	Chromosomes	One chromosome, circular molecule of double stranded DNA .	More than one chromosome , multiple linear .
4	Nucleus	Nuclear region ,nucleoid .	A true nucleus .
5	Histones	Absents.	Presents
6	Plasmids	Presents , one or more (smaller) extra chromosomal elements contain a few genes that help bacteria survive under specific conditions (circular DNA).	Absents .
7	Size of ribosomes	70s (small).	80s (large).
8	Organelle	Absents.	Presents .
9	Sexually reproduction	Don't happen in their cells (without mitosis)	Happen in their cells , cell division by mitosis .
10	Growth in antibiotics	Inhabit (sensitive to anti-biotic).	Don't Inhabit no sensitive to anti-biotic.
11	Decomposers	Remain unavailable in wastes and dead organisms .	Less than prokaryotic .
12	Examples	Bacteria , cyanobacteria	Plants , animals



13	Membrane-enclosed organelles including nucleus .	No-membrane enclosed organelles .	Presents
14	Cytoskeleton	No known cytoskeleton .	Present .
15	Flagella	Simple flagella .	Complex flagella .
16	Streaming in the cytoplasm	No streaming in the cytoplasm .	Not always present .

Characteristics of prokaryotic and eukaryotic cells

	Characteristic	Prokaryotic (Bacterial cells)	Eukaryotic (Human cells)
1	DNA within a nuclear membrane	No	Yes
2	Mitotic division	No	Yes
3	DNA associated with histones	No	Yes
4	Chromosome number	One	More than one
5	Membrane bound organelles , such as mitochondria and lysosomes	No	Yes
6	Size of ribosome	70s	80s
7	Cell wall containing peptidoglycan	Yes	No
8	Cytoskeletal structure	A primitive or no	A complex or yes
9	Organelles	No	Yes

The End