

### PROKARYOTIC EUKARYOTIC

Prokaryotic *unicellular* *pro* means before and *karyon* means nut or kernel- (nucleus)

Eukaryotic *multicellular* *eu* means true

Prokaryotic first and oldest type of cell

three-- domain system archaea, bacteria eukarya

Eukaryotic organism can be protist, fungus a plant or an animal

### differences in organelles

prokaryotic cells no membrane-bound organelles

eukaryotic membrane-bound organelles

### genetic material

prokaryotic cells short, circular DNA *has no introns or exons*

eukaryotic cells long, linear DNA *has introns or exons*

### ribosomes

prokaryotic smaller ribosomes 70s

eukaryotic larger ribosomes 80s

### sizes and complexity

prokaryotic smaller and less complex

eukaryotic larger and more complex

### reproduction

prokaryotic asexual

eukaryotic sexual

### cells first part

**THREE DOMAINS OF LIFE** bacteria archaea and eukarya

Eukarya includes protista plantae fungi animalia

### prokaryotic cells parts and terms

pili used for transfer of DNA from one bacterium to another

fimbriae adhering cells to surface

nucleoid region contains its genetic material in a form of DNA (*short double-stranded, circular loop*)

Plasmids antibacterial resistance

flagella or flagellum allows locomotion

plasma membrane semi permeable membrane

cell wall maintains the shape

capsule protective layer

cytoplasm water, nutrients, etc.

ribosomes rRNA and proteins smaller (70S0)

Svedberg (S) unit of rate of settling down of particles on a particular medium.

**PROKARYOTIC CELL REPRODUCTION** asexual reproduction through a process known as **binary fission**

### EUKARYOTIC CELLS

centriole produce spindle fibers that aid in chromosome movement

### cells first part (cont)

plasmodesmata holes in the cell wall that allow the communication and transportation of materials (plants)

### asexual reproduction

*budding* new organism develops

*fragmentation* a piece of the body or

*vegetative* new plants are produced from root...

sexual reproduction when the sperm from the male parent fertilizes an egg from the female parent...

### THREE MAIN FORM OF BACTERIAL SEXUAL REPRODUCTION\*

conjugation one bacterium transfers genetic material to another through **direct contact**

transformation type of prokaryotic rep in which a prokaryote can take up DNA found within the environment that has originated from other prokaryotes

transduction genetic recombination in bacteria in which genes from a host cell are incorporated into the genome of a bacterial virus and then carried to another host

transfection electrical shock

### part 2

common features of pro and eukaryotic

plasma membrane cytoplasm DNA nucleoid region Nucleus ribosomes

#### TERMS

organelles enable the cell to live grow and reproduce

cell membrane outer later of cell ; allow nutrients in to the cell and wastes outside of the cell *gate in to the city*

cytoplasm jelly like fluid contained in the cell that holds the organelles

the nucleus control center of the cell ; contains the cell's DNA *mayor's office*

Mitochondria power center ; provides the energy the cell needs; *electric company of the cell*

ribosomes site where proteins are made ; cell parts are made of proteins *factories of the cell*

### part 2 (cont)

endoplasmic reticulum transportation system ; rough ER-ribosomes attached smooth ER\_no ribosomes's *roadways of the cells*

golgi complex packaging house of cells *UPS of the cell*

lysosomes digest food particles and cells parts ; protects cell *garbage and police men*

vauole largest organelle in plants cell ; stores water food and wastes

cell wall found only in plant cells ; protects ad supports the cell

chroloplasts found only in plants cells where photosynthesis takes place

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Not published yet.  
Last updated 30th August, 2023.  
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