HISTOLOGY

Practical histology

Baneen falih sweed

Cytology

Cell is the structural unite of all living organisms, there are two types of cell:

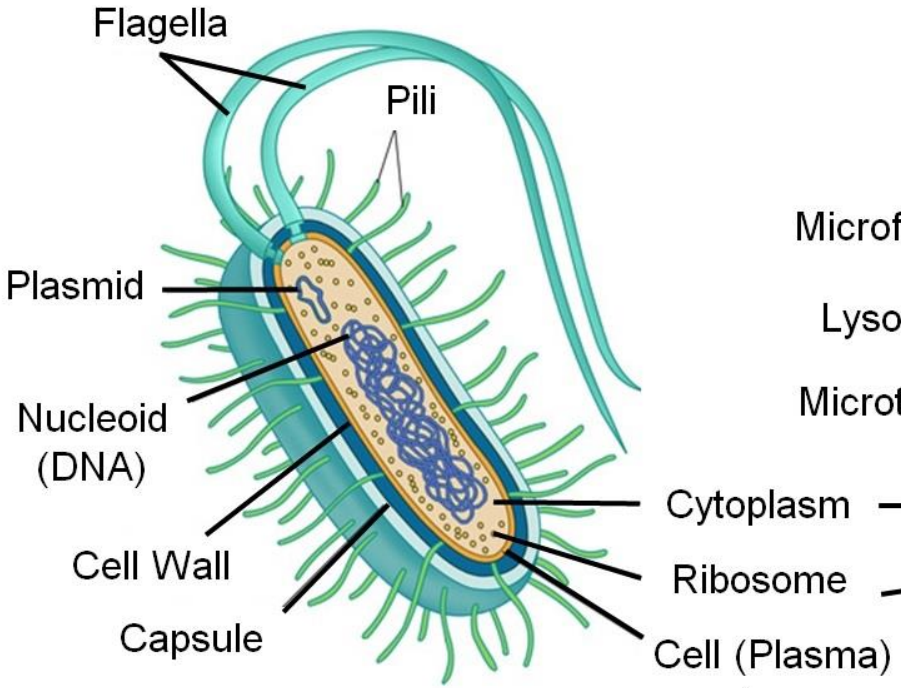
Prokaryotic cell: it’s small size & has cell wall.

Eukaryotic cell: cells are larger and have a distinct nucleus surrounded by nuclear envelope.

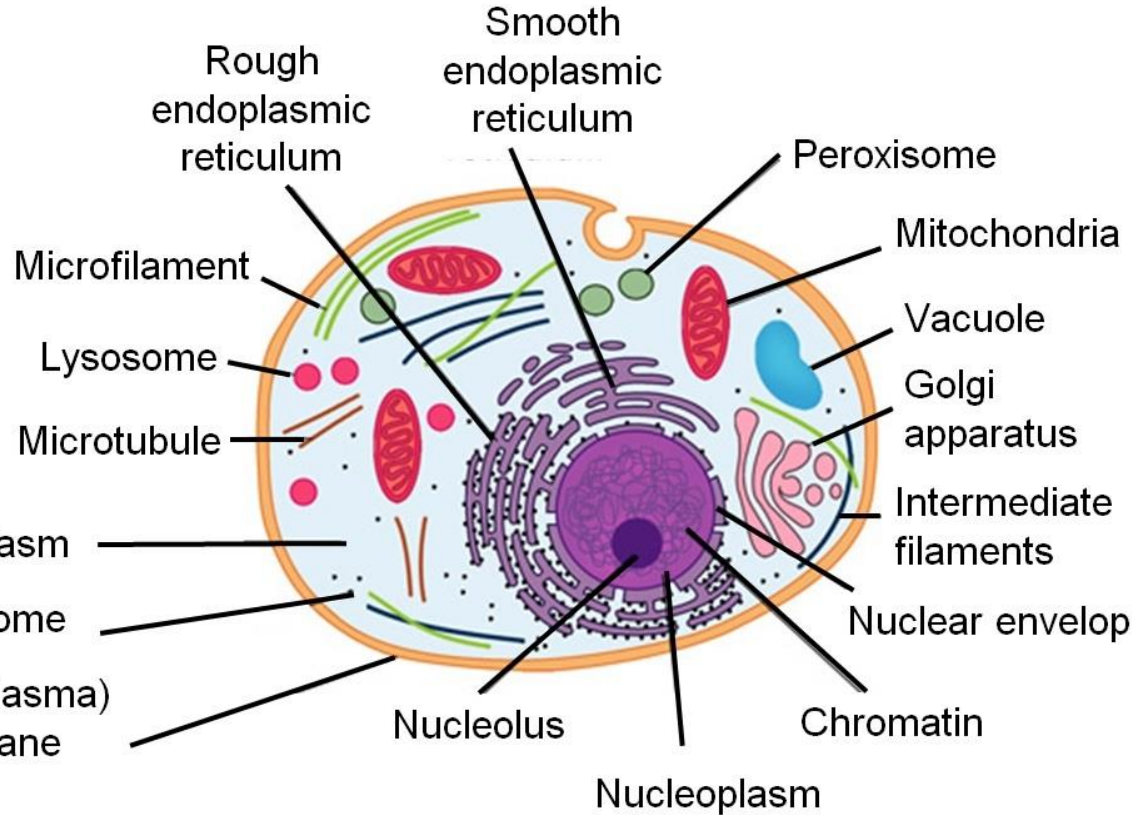
Any cell consists of two main compartments: **Cytoplasm** and the **Nucleus**.

teachoo

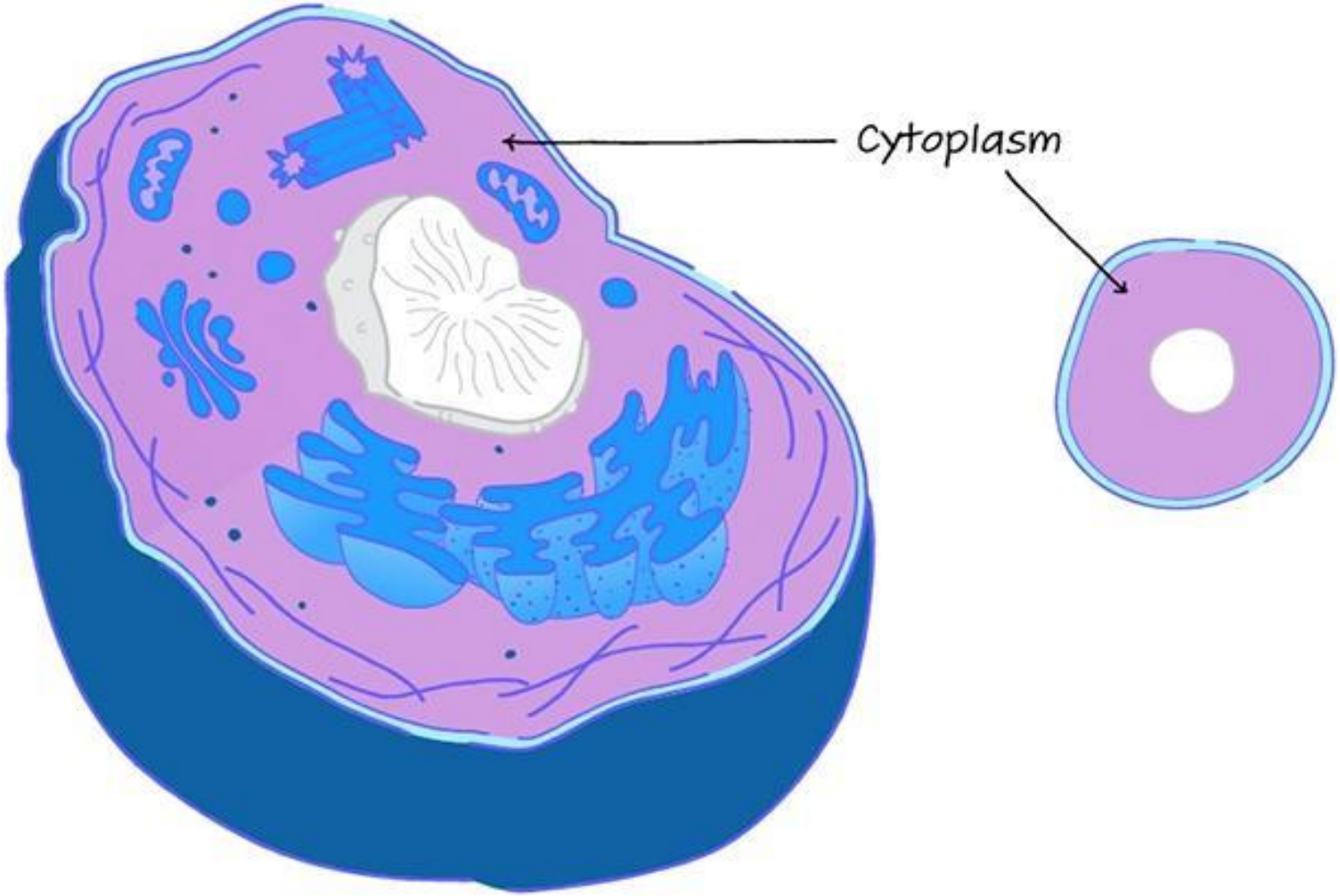
EUKARYOTES Vs PROKARYOTES



Eukaryotes



Prokaryotes


Cytoplasm

ANIMAL CELL ORGANELLES :

1- Cell membrane : the thin layer of protein and fat that surrounds the cell. The cell membrane is semipermeable, allowing some substances

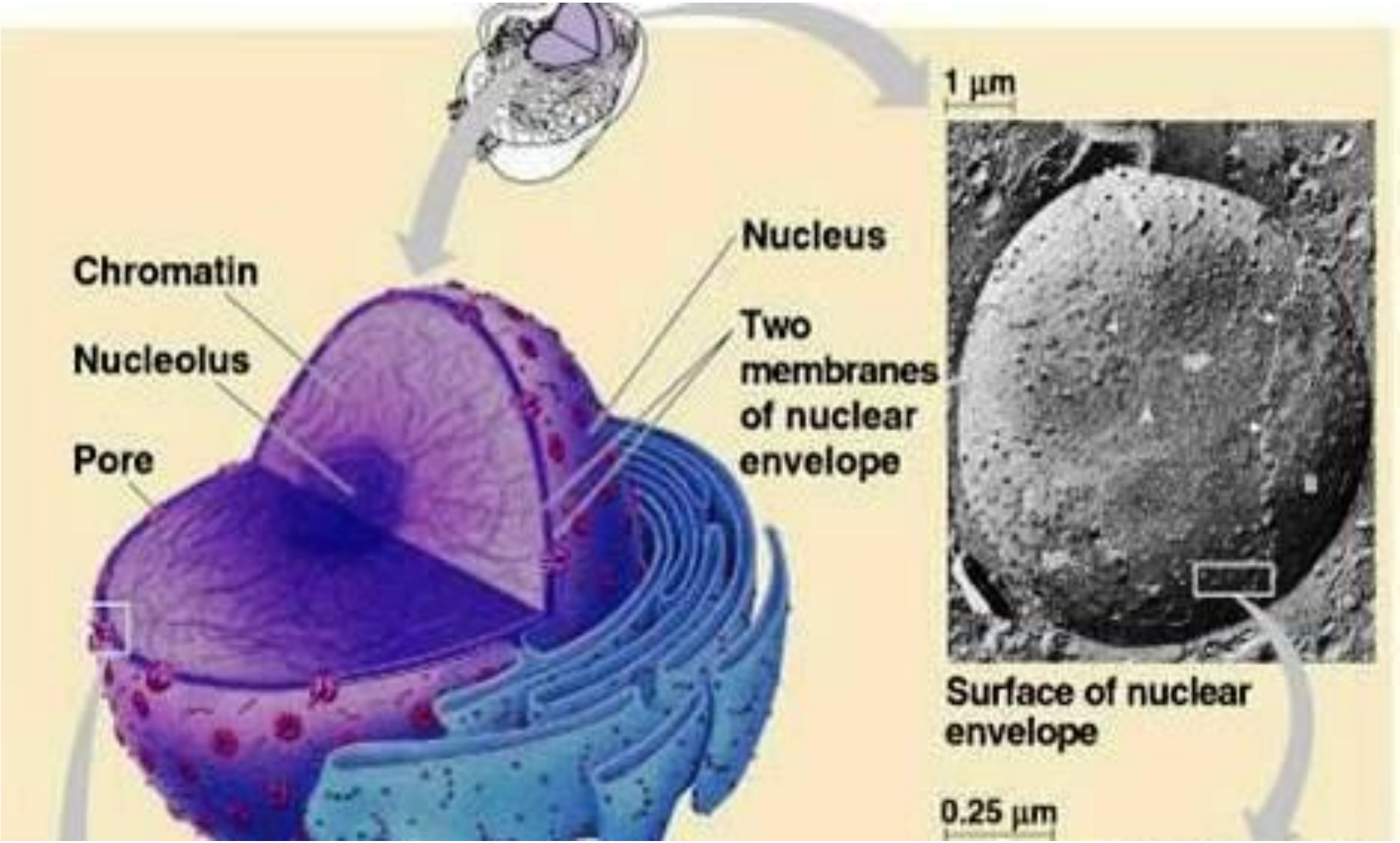
To pass into the cell and blocking others and give cell shape

2- Cytoplasm : the jelly like material outside the cell nucleus in which the organelles are located.

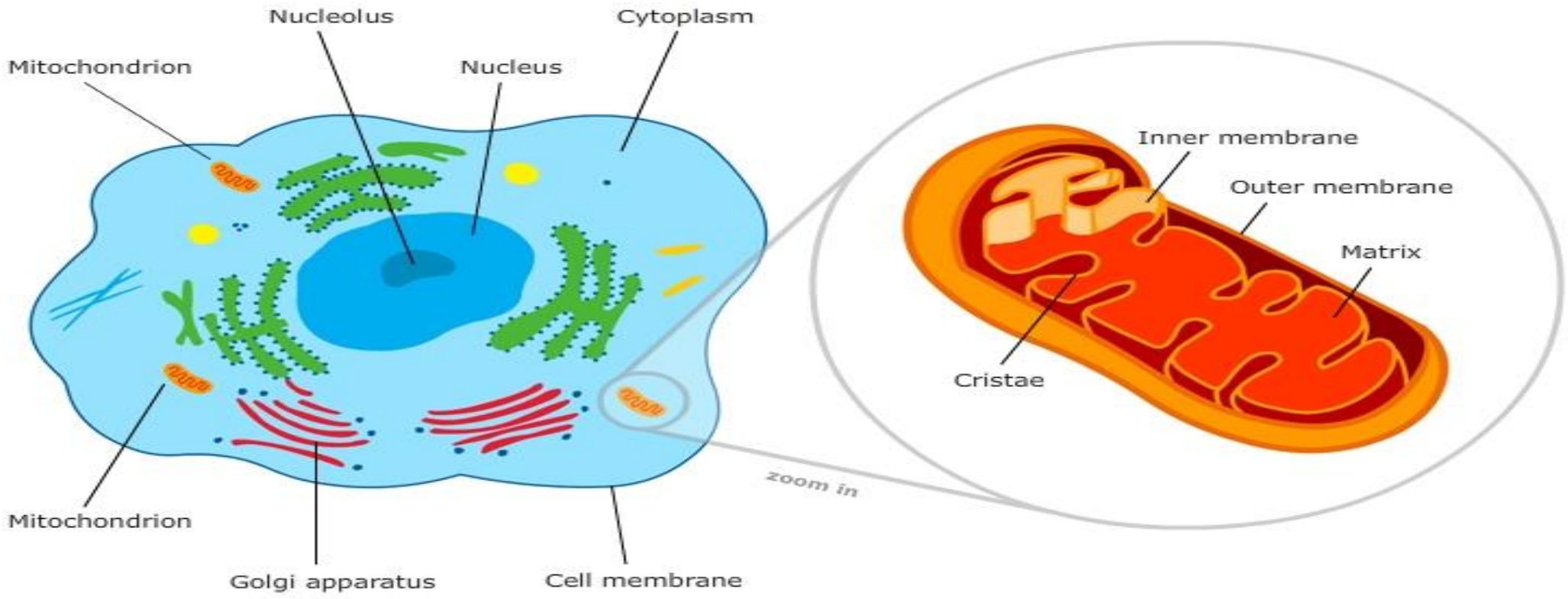
3- Nucleus : spherical body containing many organelles, including the nucleolus. The nucleus controls many of the functions of the cell (by controlling protein synthesis) and chromosomes). The nucleus is contains DNA (in surrounded by the nuclear membrane.

4- Nuclear membrane : the membrane that surrounds the nucleus

5- Nucleolus : an organelle within the nucleus - it is where ribosomal RNA is produced.


Chromatin
Nucleolus
Pore
Nucleus
Two membranes of nuclear envelope
1 µm
Surface of nuclear envelope
0.25 µm

6- Mitochondria : **The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell.**



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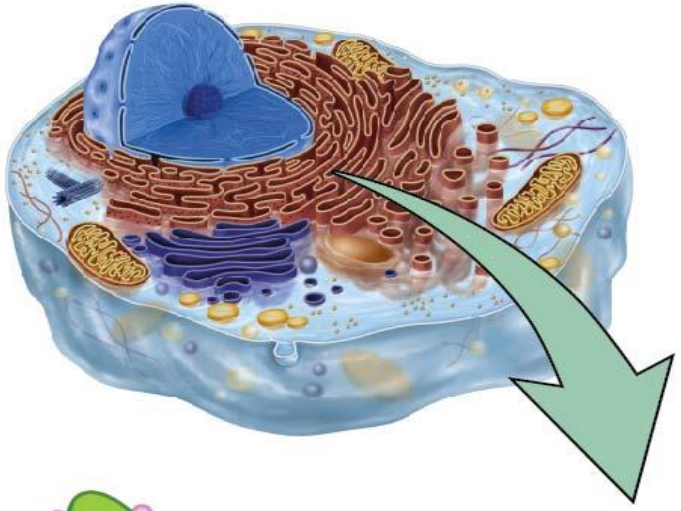
7_Endoplasmic Reticulum (ER)

- It is the largest membranous system in the cell.
- It is a system of interconnection tubules and vesicles.
- ER has 2 types; smooth and rough ER.

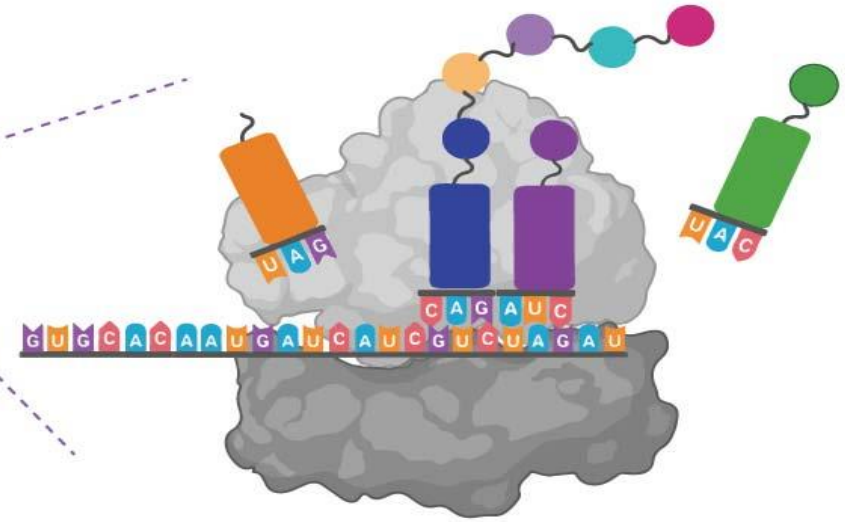
8- Ribosomes: small organelles composed of RNA-rich cytoplasmic granules that are sites of protein synthesis.

Endoplasmic reticulum

the cellular inter "NET"



Rough endoplasmic reticulum (RER)



Ribosome

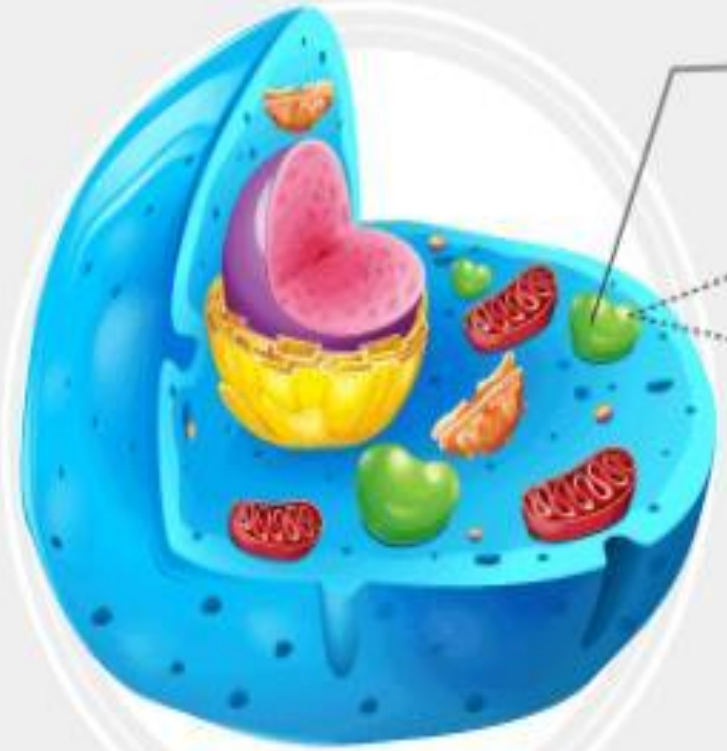
rsscience.com

:Golgi Apparatus

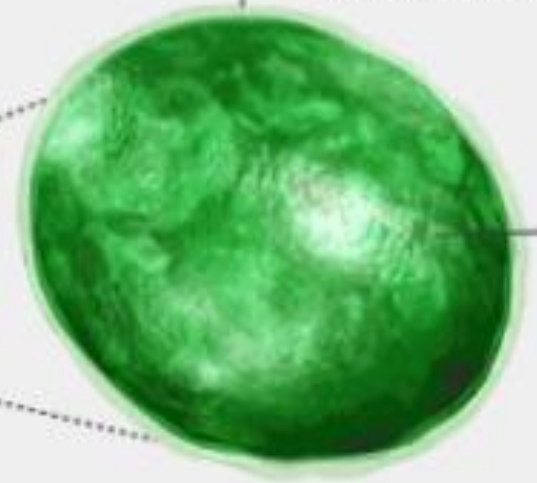
Processing, assembly and shipping of proteins coming from the endoplasmic reticulum to their various destinations inside and outside the cell

10- Lysosome: (also called cell vesicles) round organelles surrounded by a membrane and containing digestive enzymes. This is where the digestion of cell nutrients takes place.

LYSOSOMES



Lysosomes



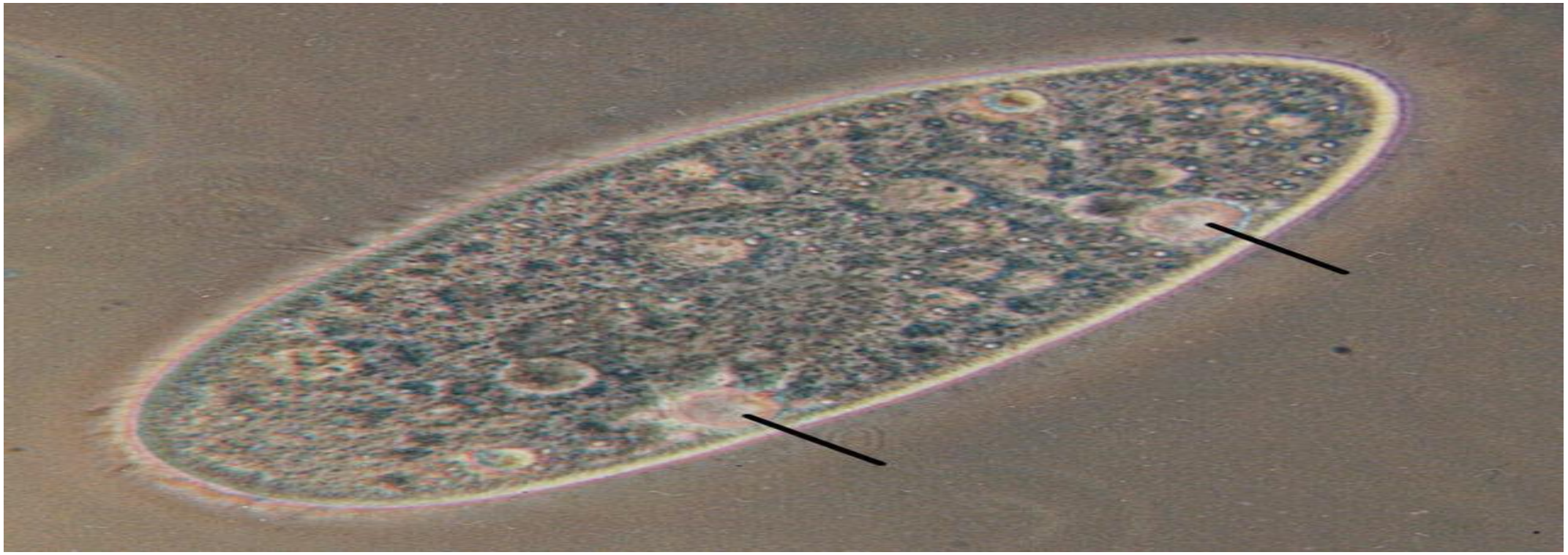
Single wall Membrane

Enzyme complexes

11- Vacuole - fluid-filled, membrane-surrounded cavities inside a cell.

The vacuole fills with food being digested and waste material that is on

its way out of the cell.



THANK YOU FOR YOUR LISTENING