

CELL ORGANELLES – SIMPLE DEFINITION

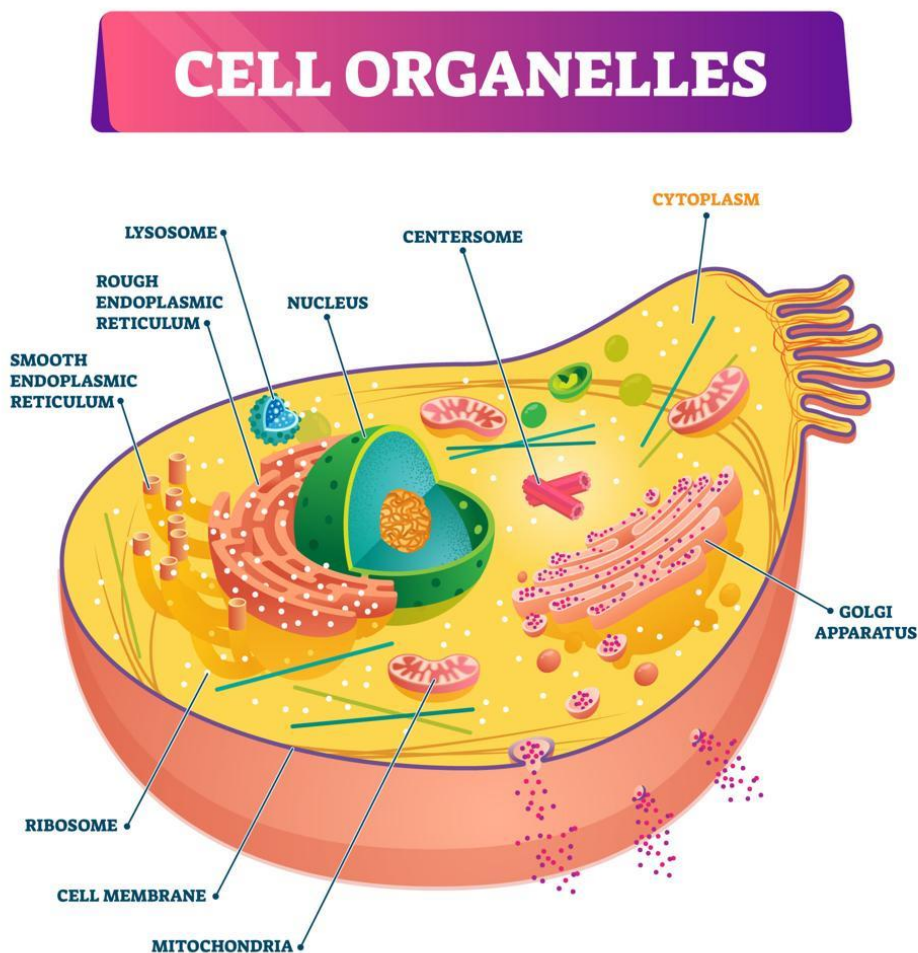
Cell organelles are small parts inside a cell that perform different functions to keep the cell alive.

□ Simple:

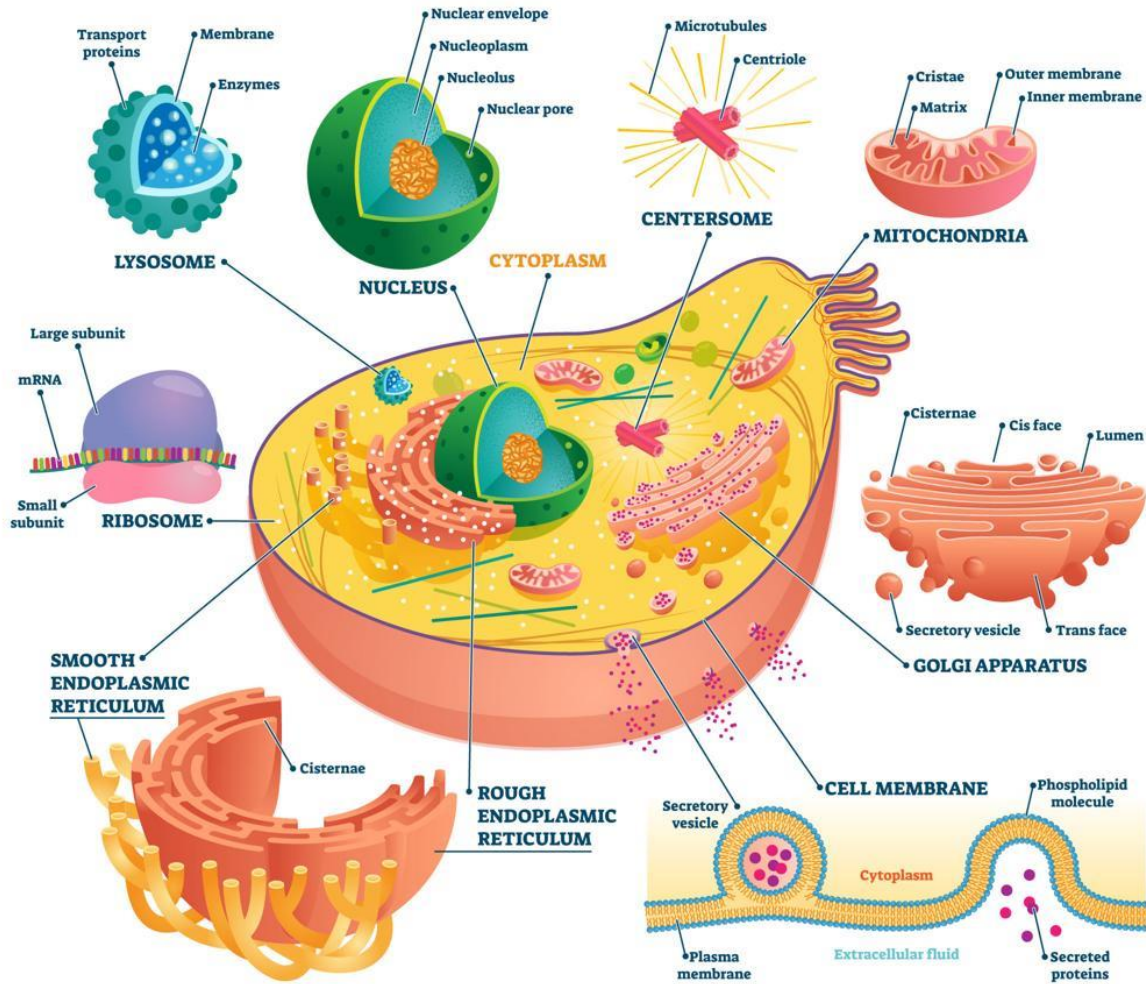
Organelles = Small working parts of a cell

MAIN PARTS OF CELL

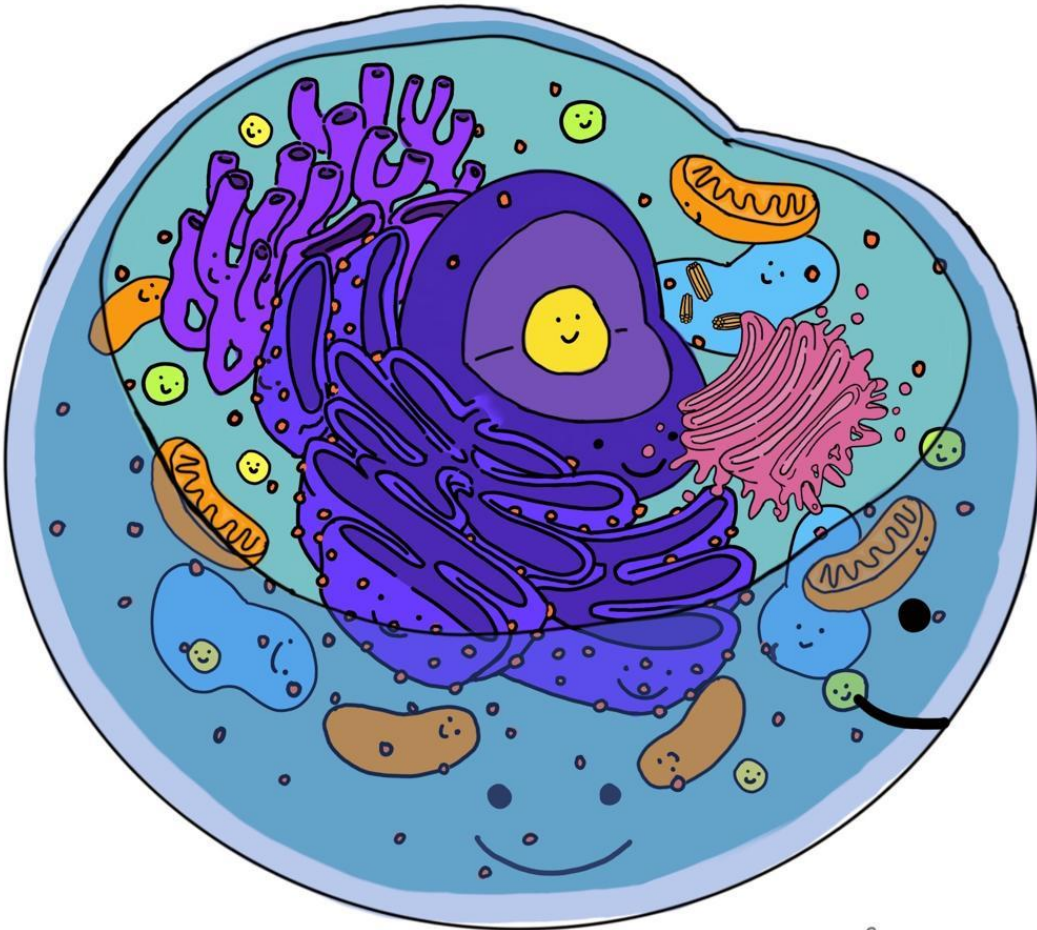
1. Cytoplasm



CELL ORGANELLES



The **cytoplasm** is the fluid substance inside of a cell. It includes everything inside of the cell membrane except for the **nucleus**. The **cytosol** is the watery portion of the cytoplasm that all the organelles float in.



Sylvia Freeman

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Easy Description:

Cytoplasm is a **jelly-like fluid** inside the cell where all organelles are present.

□ Function:

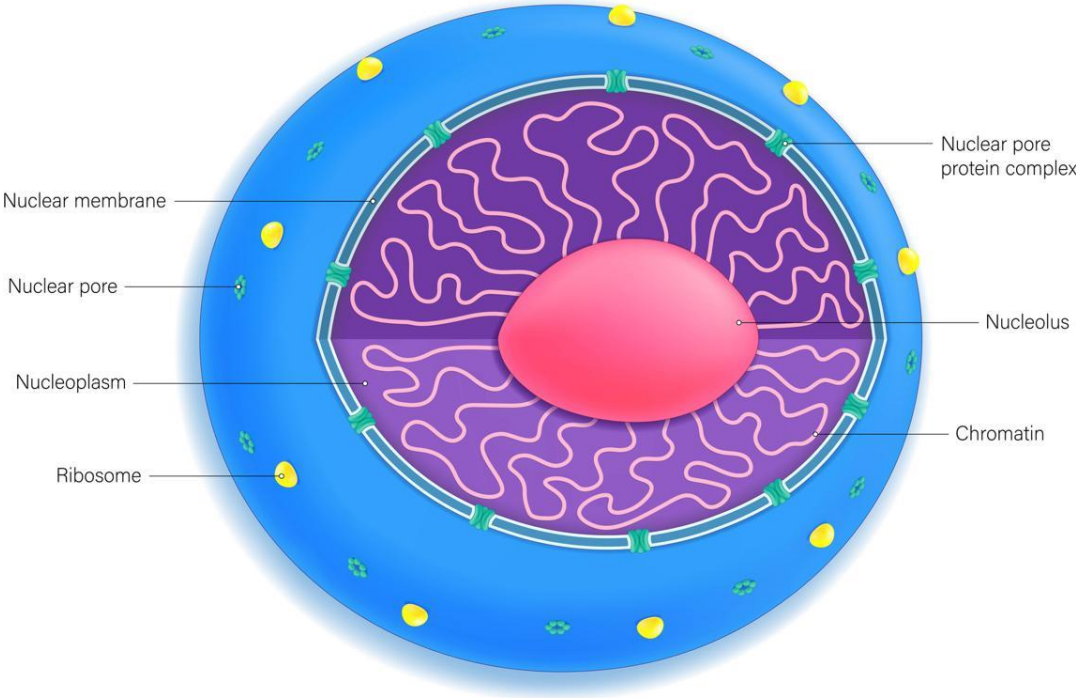
- Holds organelles
- Helps in chemical reactions

□ Composition:

- Mostly **water**, proteins, salts

2. Nucleus

Nucleus



Nucleus

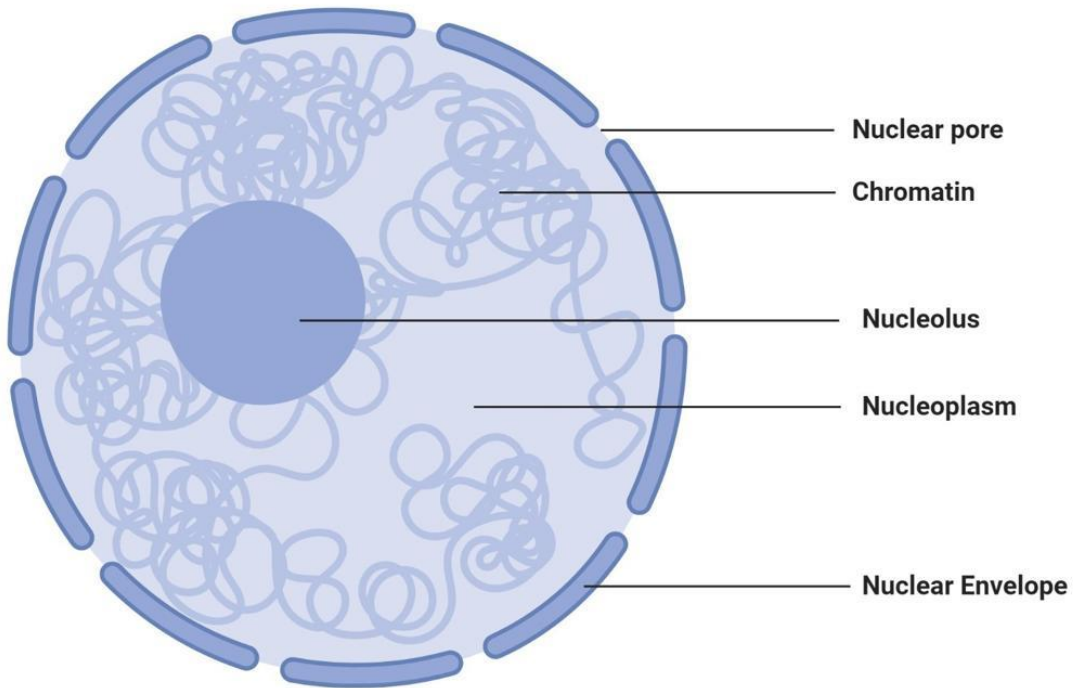
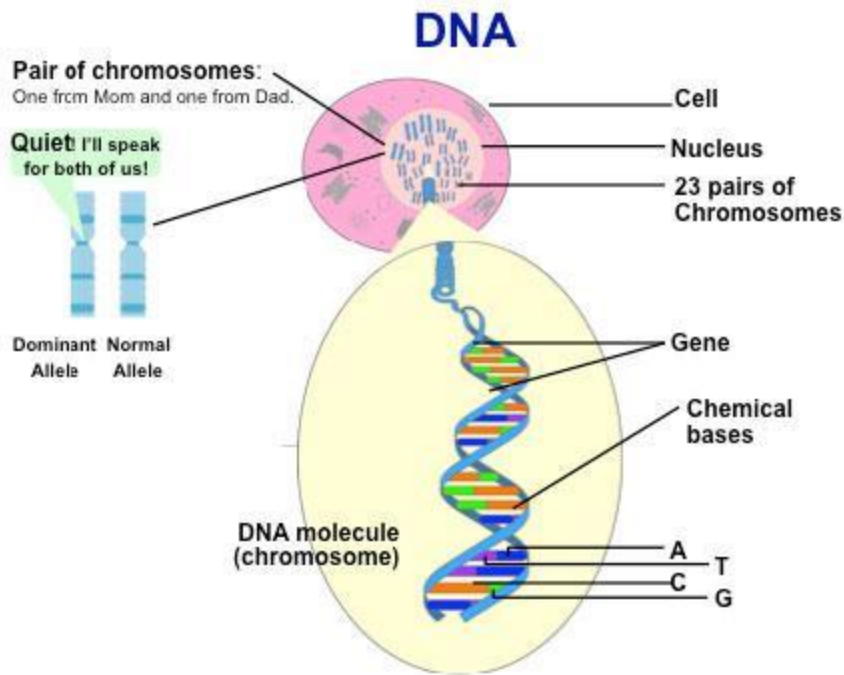


Figure: Nucleus, Image Copyright © Sagar Aryal, www.microbenotes.com



Easy Description:

The nucleus is the **control center** of the cell.

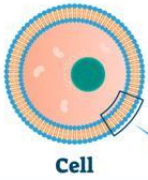
 Function:

- Controls cell activities
- Stores **DNA (genetic material)**

 Structure:

- Nuclear membrane
 - Nucleolus
-

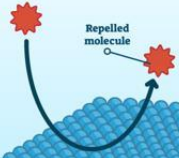
3. Cell Membrane



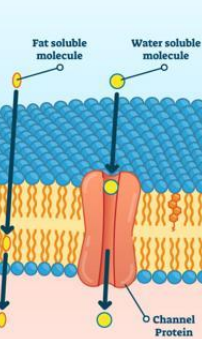
FLUID MOSAIC MODEL

FUNCTIONS

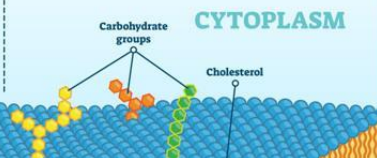
Protection



Transportation

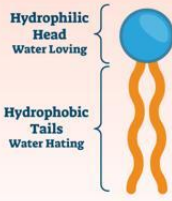


Communication

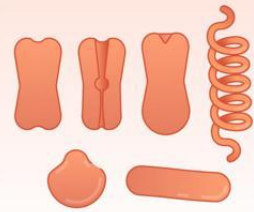


CYTOPLASM

Phospholipid Bilayer



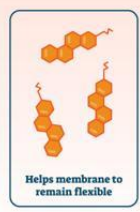
Phospholipids



Proteins



Carbohydrates (sugars)

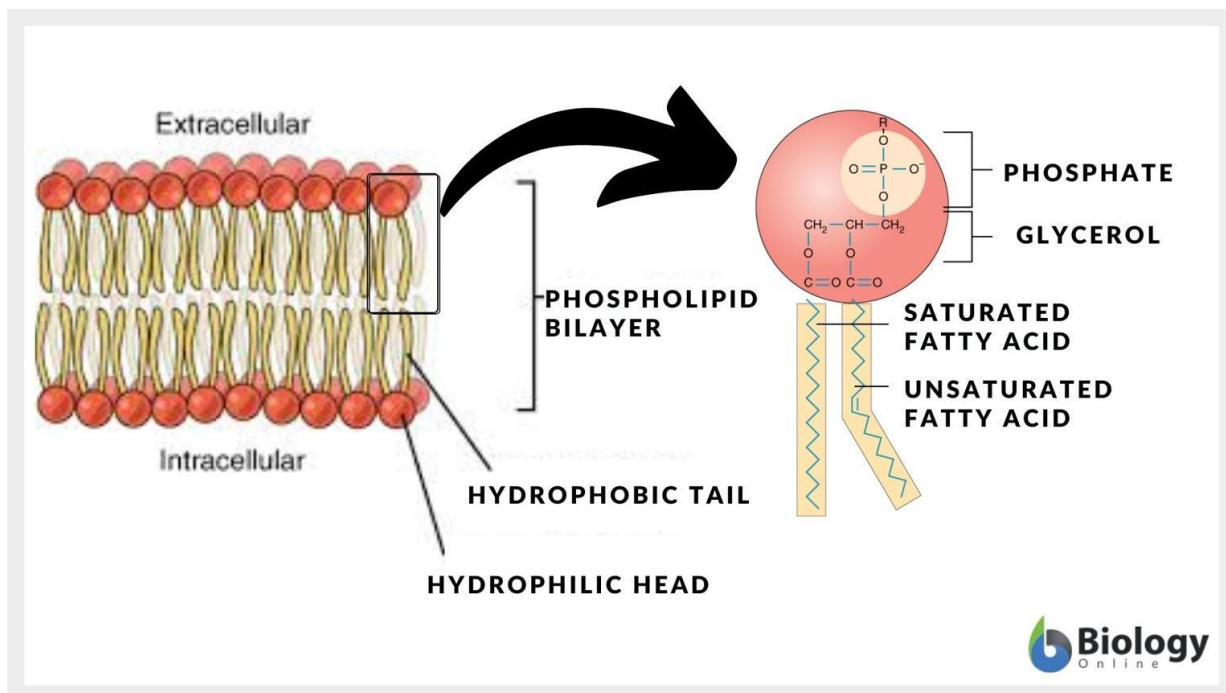
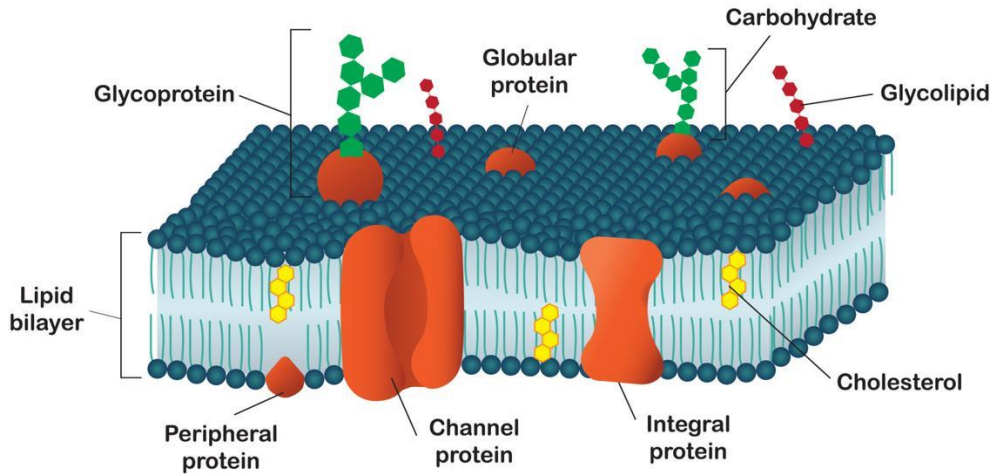


Cholesterol

EXTRACELLULAR ENVIRONMENT

Helps membrane to remain flexible

CELL MEMBRANE



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Easy Description:

It is the **outer covering** of the cell.

Function:

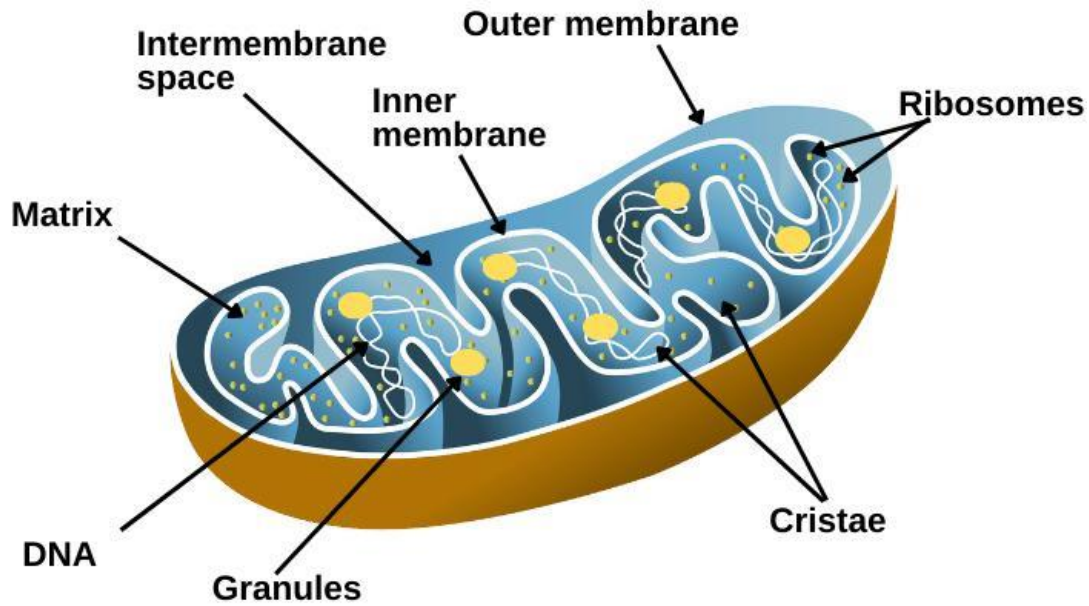
- Controls what **enters and leaves** the cell

□ Property:

- **Semi-permeable** (selective)

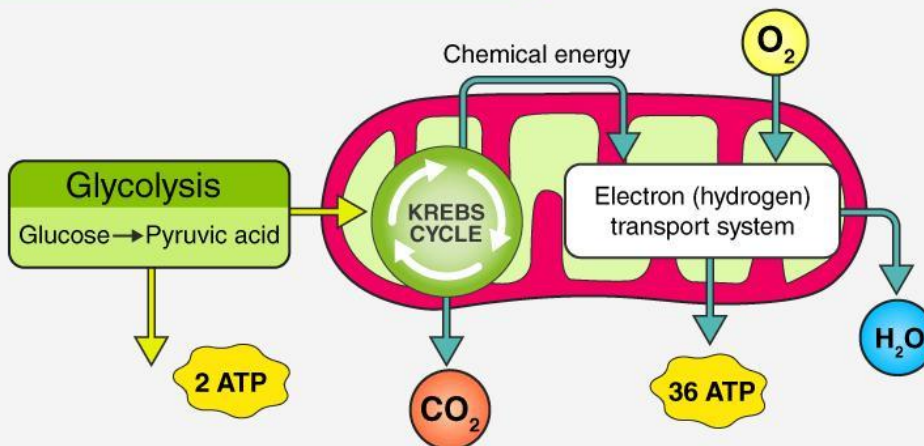
4. Mitochondria

Vedantu
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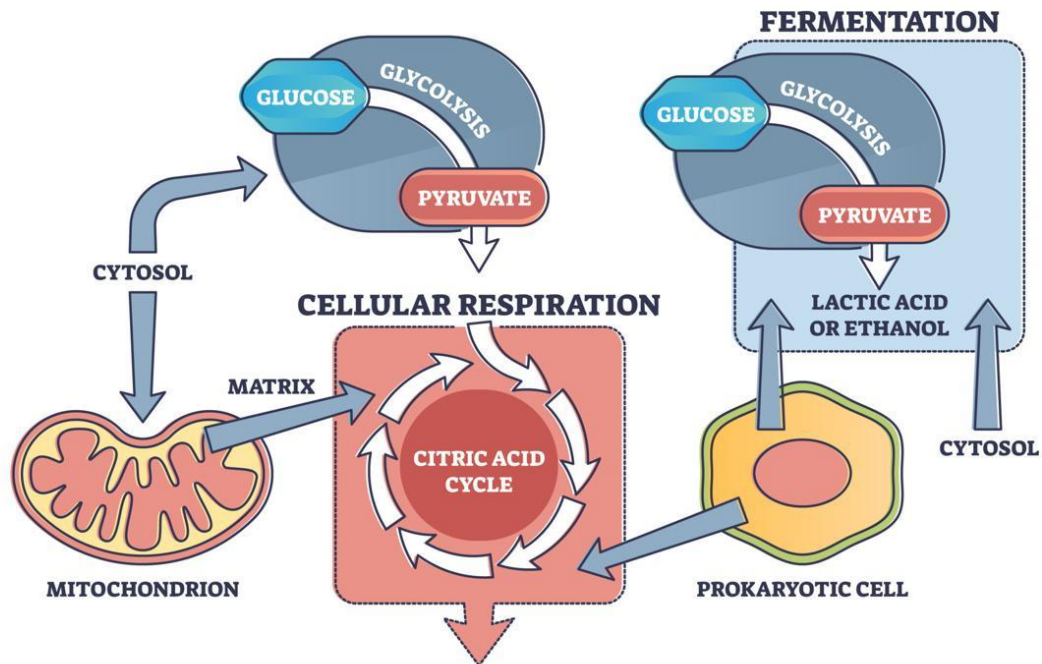


CELLULAR RESPIRATION

BYJU'S
The Learning App



CELL RESPIRATION



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Easy Description:

Mitochondria are the **powerhouse of the cell**.

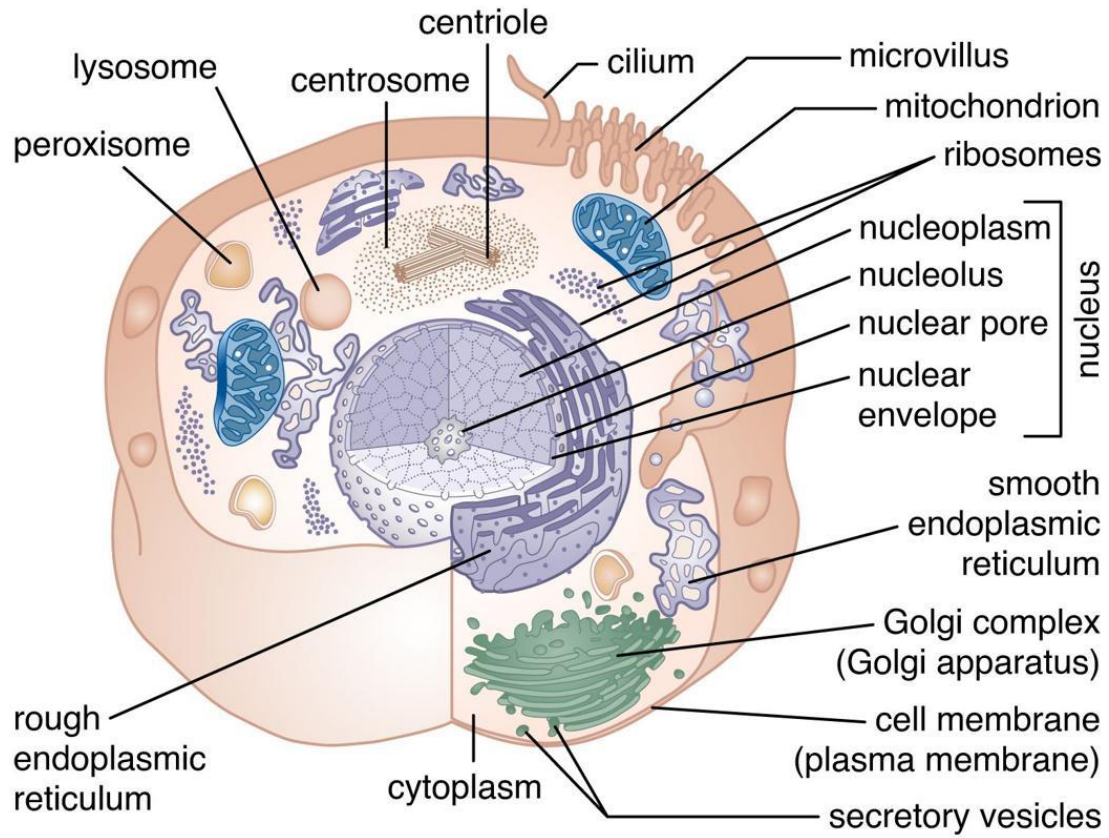
Function:

- Produce **energy (ATP)**

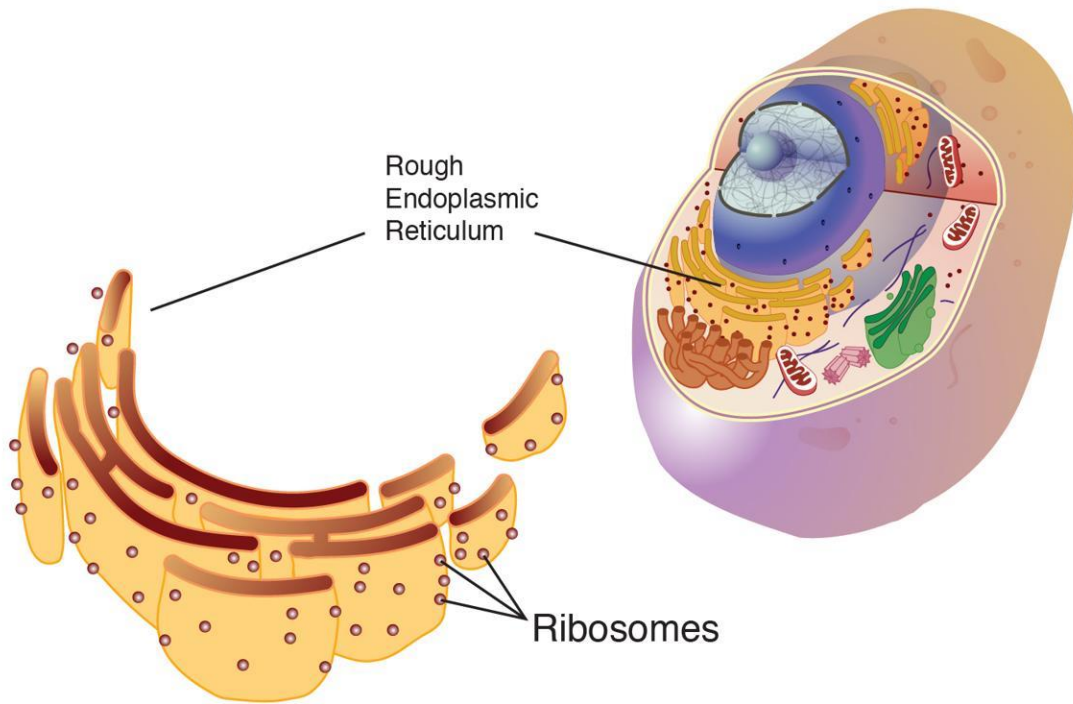
Structure:

- Double membrane
- Inner folds (cristae)

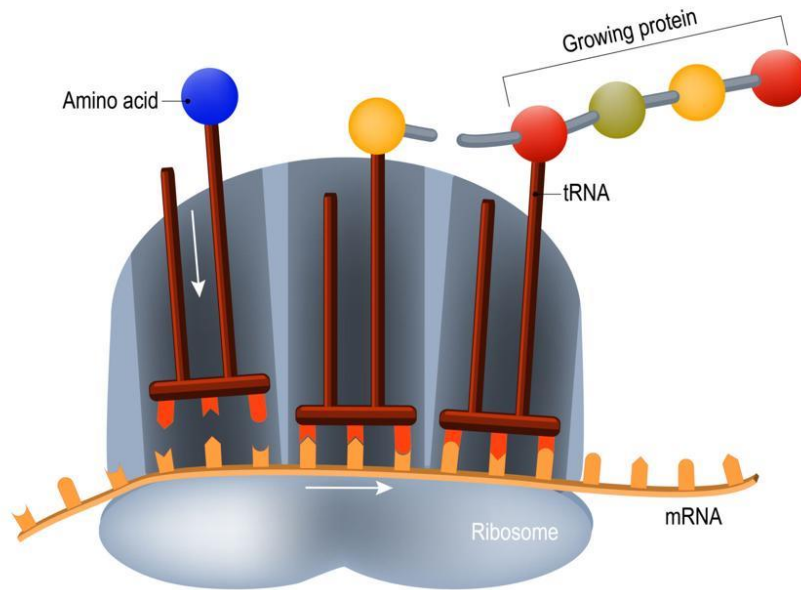
5. Ribosomes



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PROTEIN SYNTHESIS



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Easy Description:

Ribosomes are **tiny particles** in the cell.

Function:

- Make **proteins**

Found:

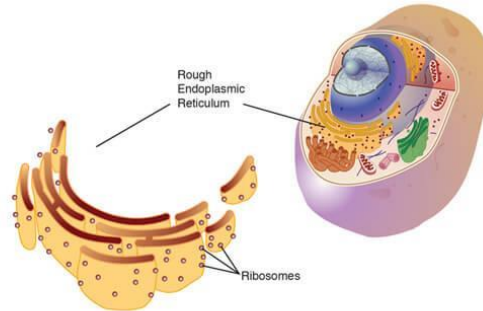
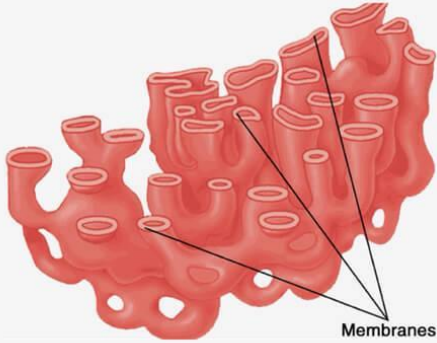
- In cytoplasm or on rough ER

6. Endoplasmic Reticulum (ER)

Smooth Endoplasmic Reticulum

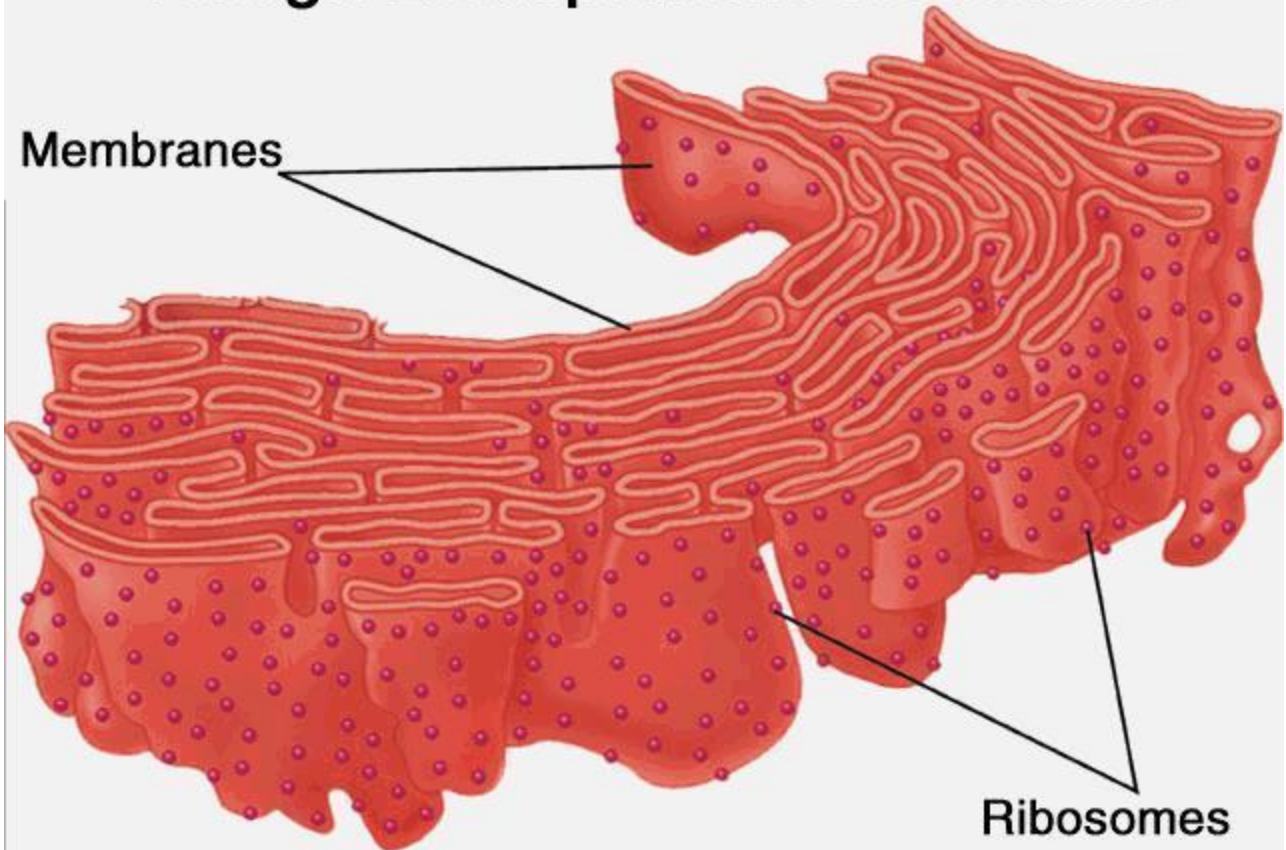
VS

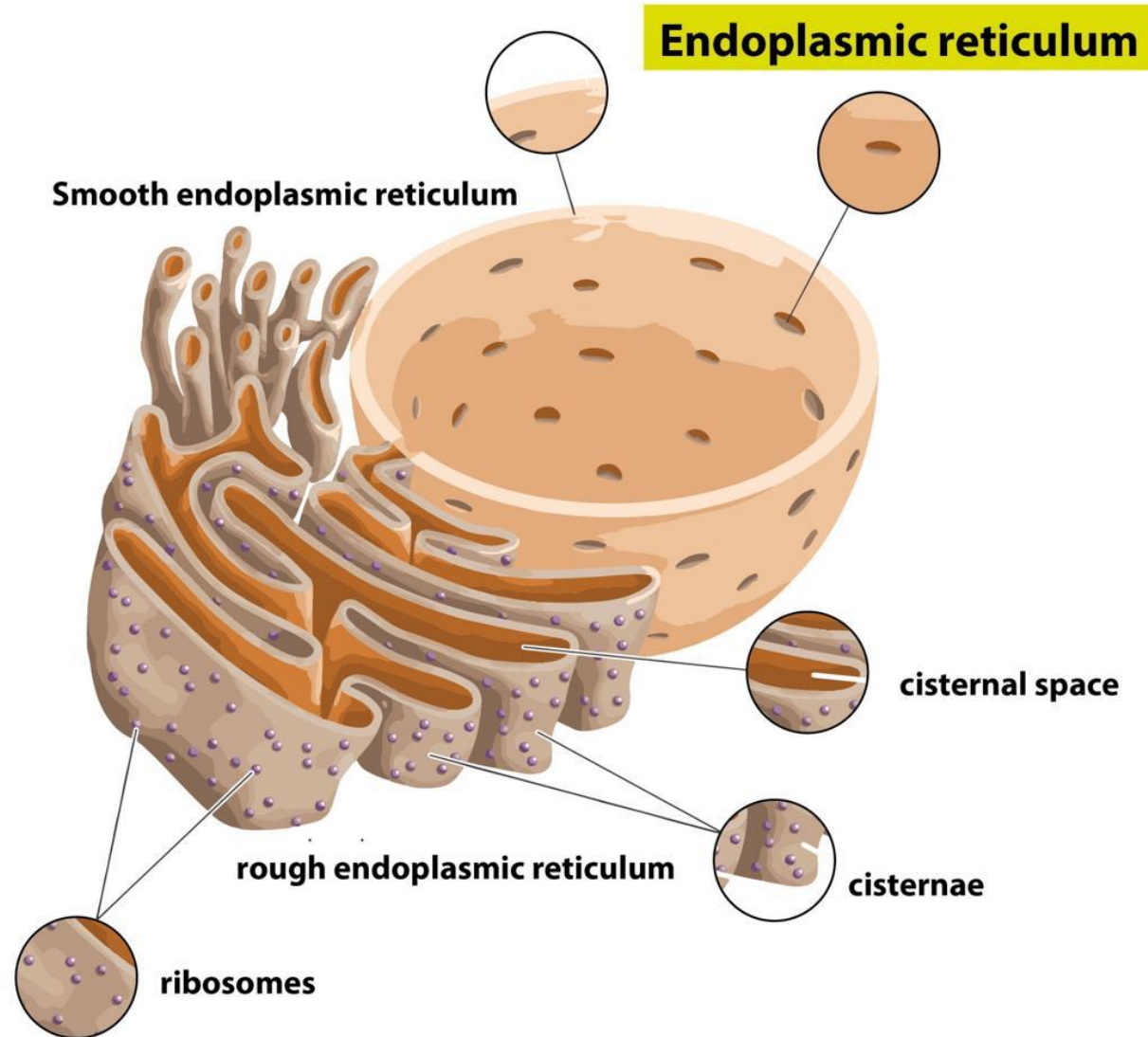
Rough Endoplasmic Reticulum



Rough Endoplasmic Reticulum

Membranes





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Easy Description:

ER is a **network of tubes** inside the cell.

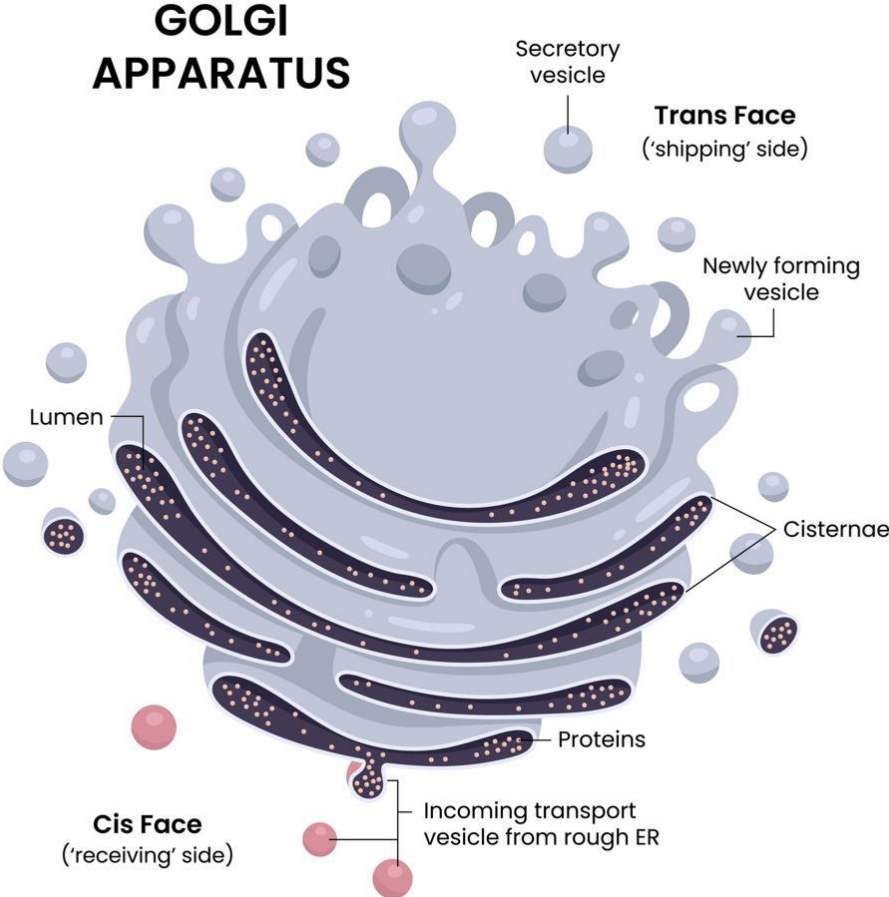
□ Types:

- Rough ER (with ribosomes)
- Smooth ER (without ribosomes)

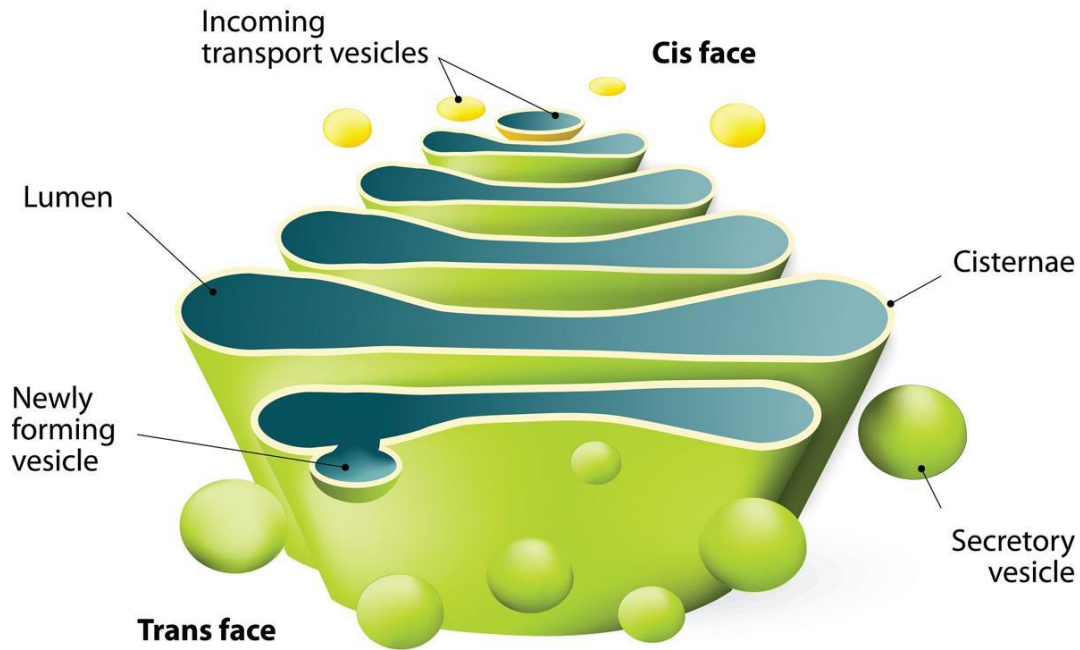
□ Function:

- Transport materials
 - Make proteins and lipids
-

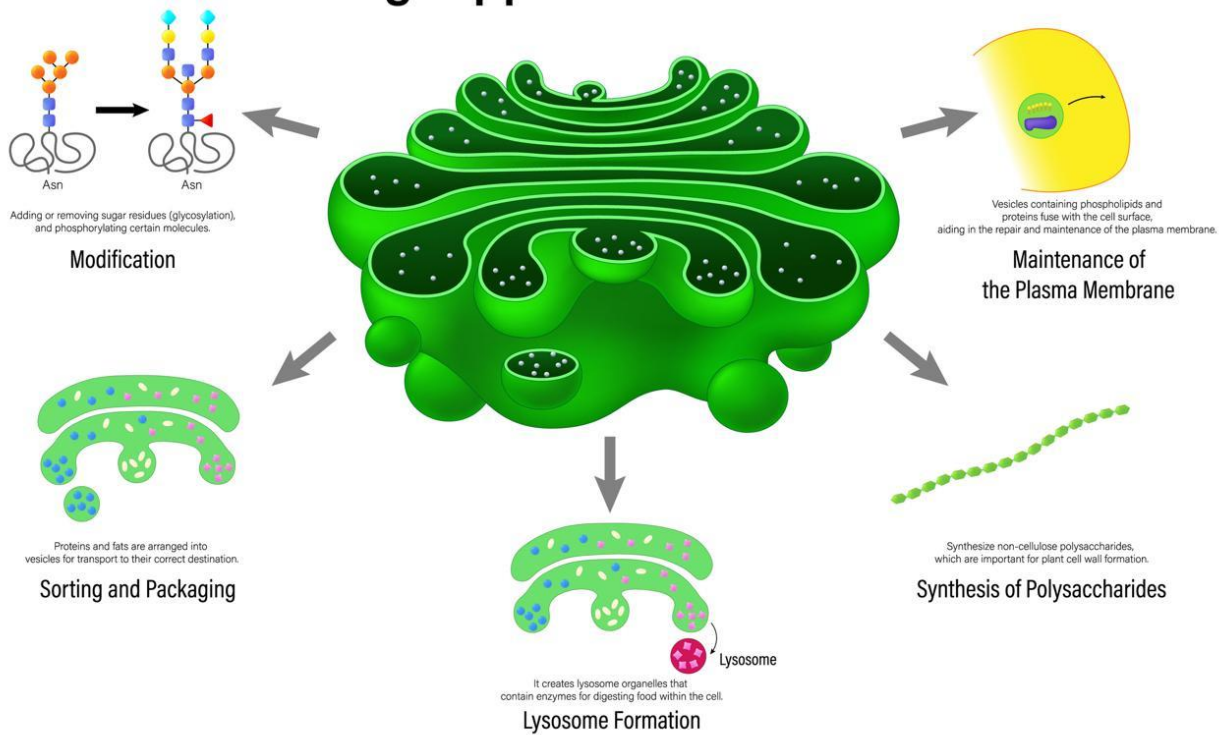
7. Golgi Apparatus



Golgi Apparatus



Golgi Apparatus Functions



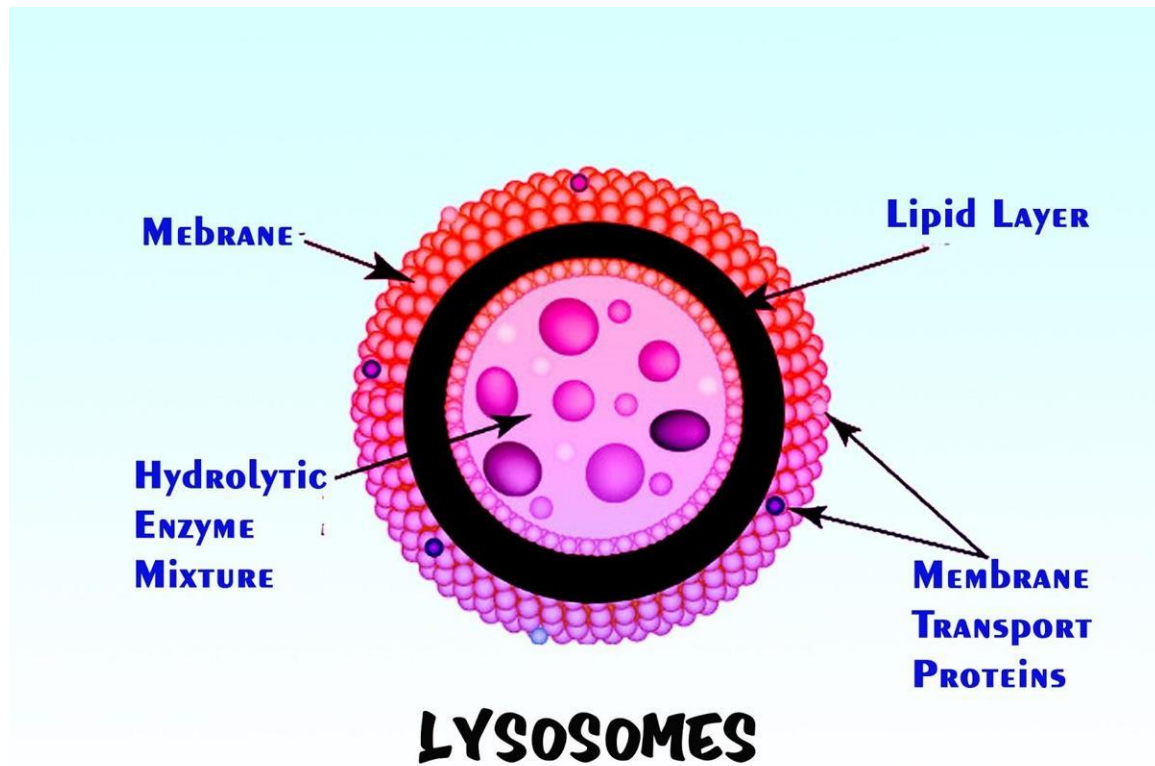
Easy Description:

Golgi apparatus is the **packing and sending center**.

□ Function:

- Modifies and packs proteins
- Sends them to different parts

8. Lysosomes



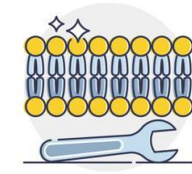
FUNCTIONS OF LYSOSOMES



Antigen Presentation



Gene Regulation



Plasma Membrane Repair



Microbial Killing



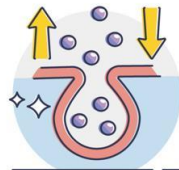
LYSOSOME



Cholesterol Transport



Bone Resorption

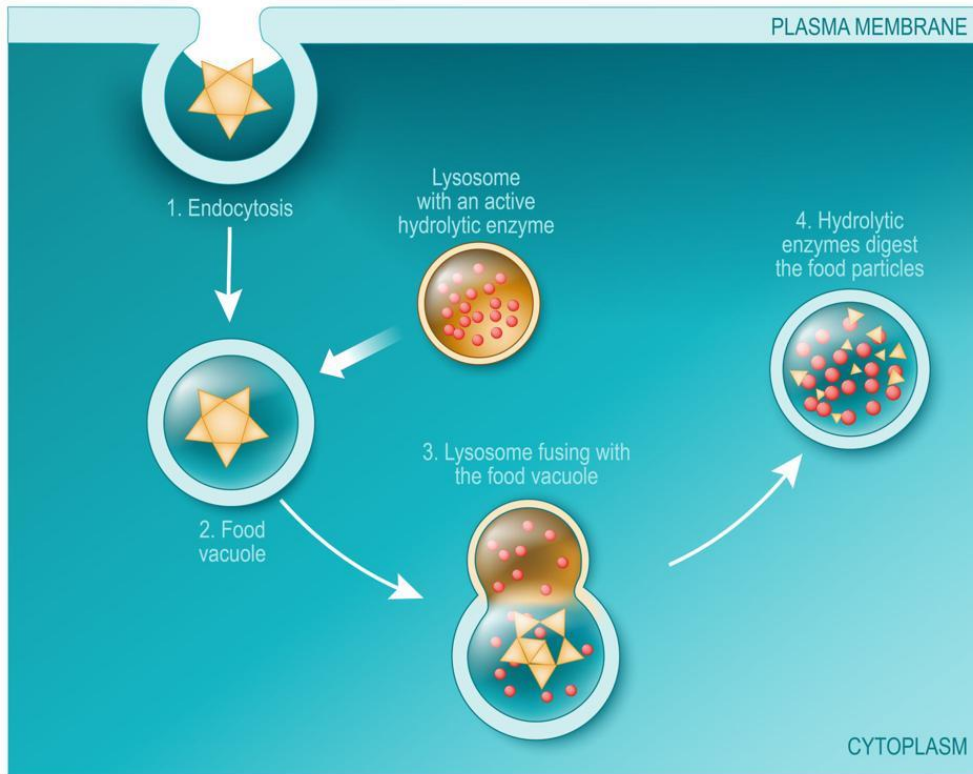


Intracellular Digestion



Autophagy

Lysosome digesting food



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Easy Description:

Lysosomes are **digestive sacs**.

Function:

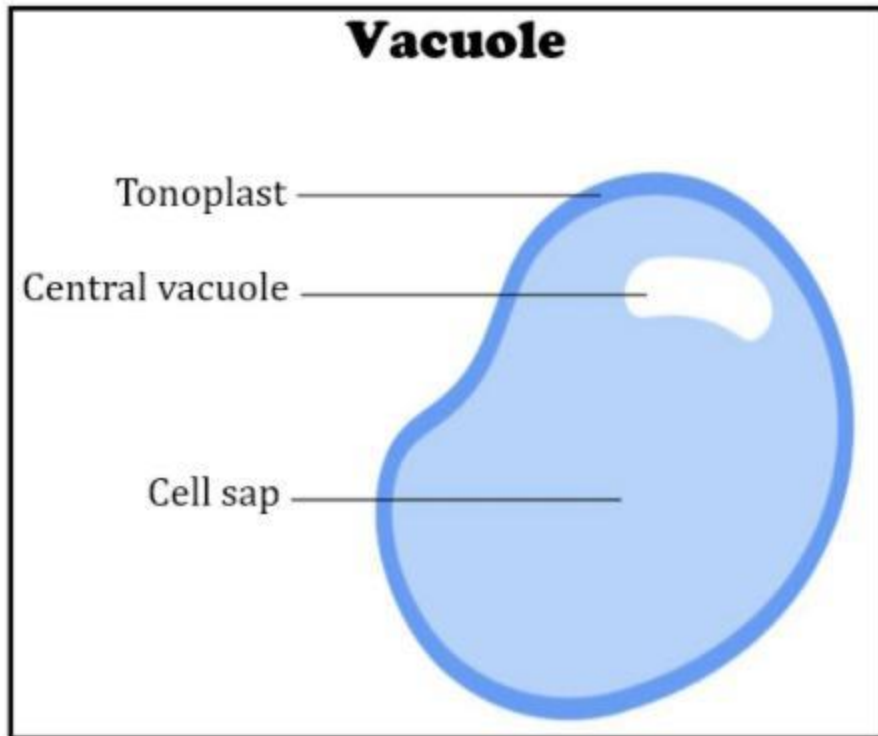
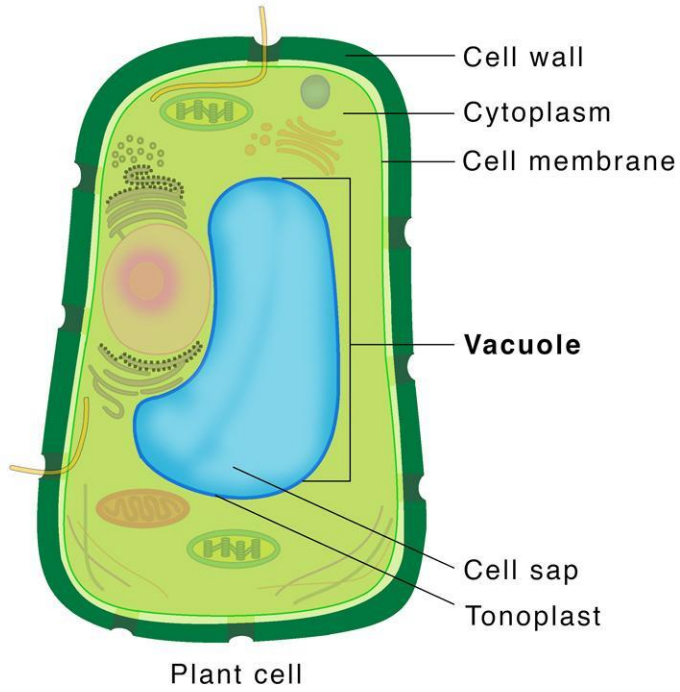
- Break down waste and old parts

Known as:

- “Suicide bags”

9. Vacuole

Vacuole



CELLULAR WATER

