Manufacturing Organelles

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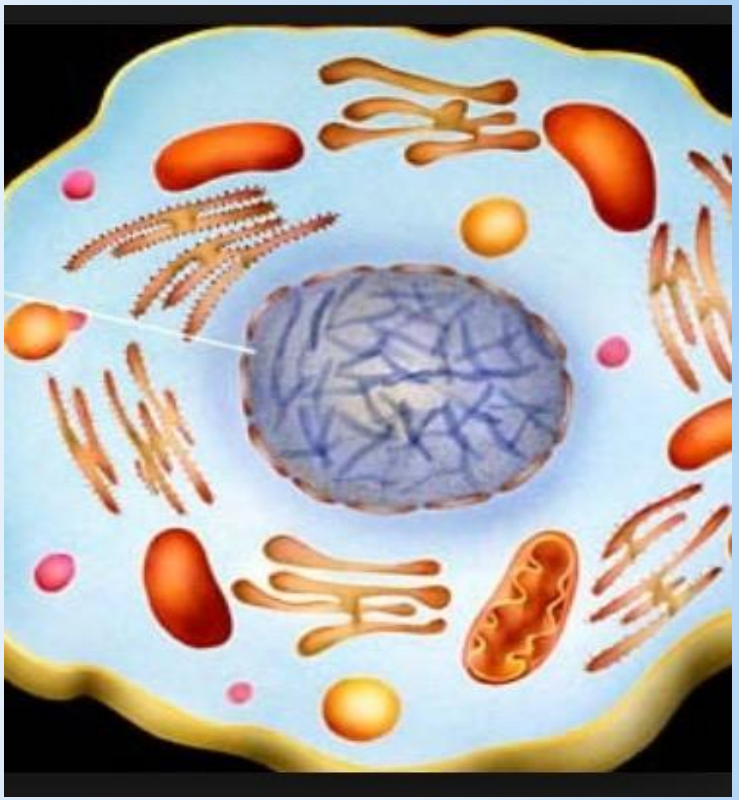
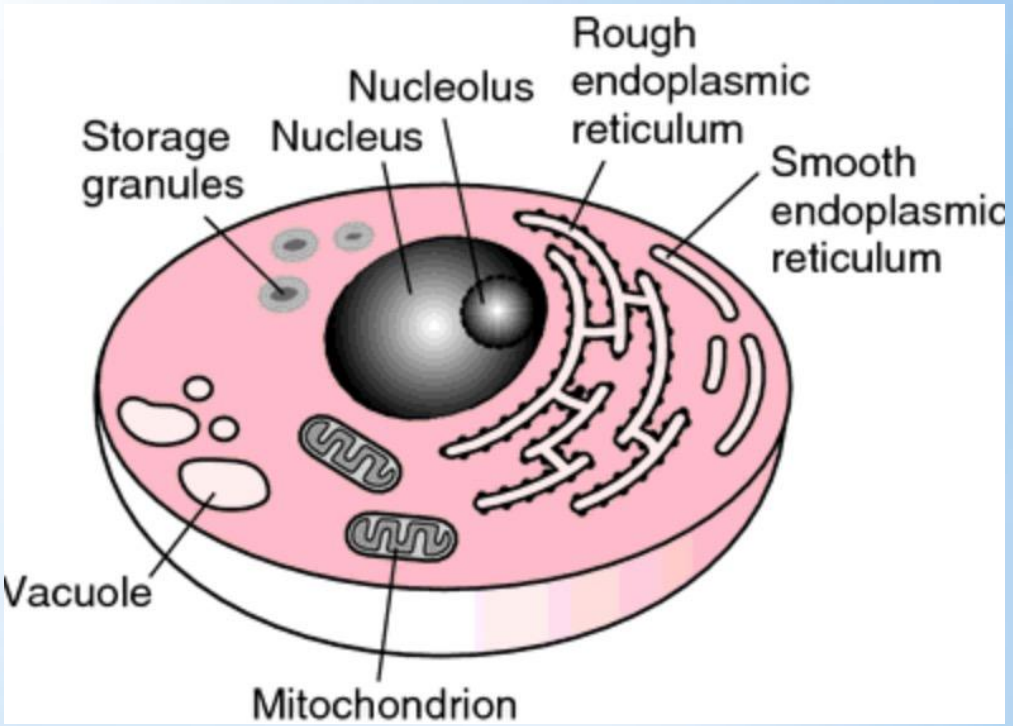
Nucleus

- The nucleus is a large membrane enclosed structure that contains genetic material in the form of DNA and controls many of the cell activities.
- This organelle is in plant cells and well as animal cells.
- This organelle is not located in bacteria cells.



Nucleus Study Tips

- Imagine the nuclear envelope is dotted with thousands of nuclear pores, which allow material to move into and out of the nucleus.
- Like instructions,blueprints moving in and out of a factory's main office, a steady stream of proteins, RNA, and other Molecules move through the nuclear pores to and form the rest off the cell.



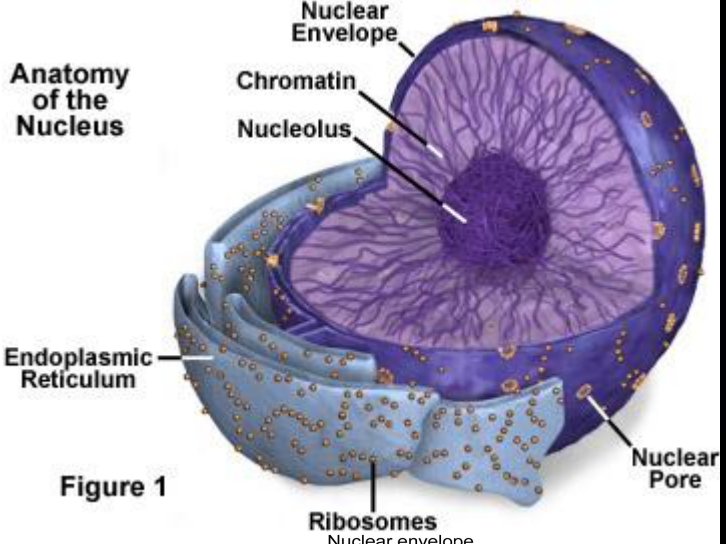
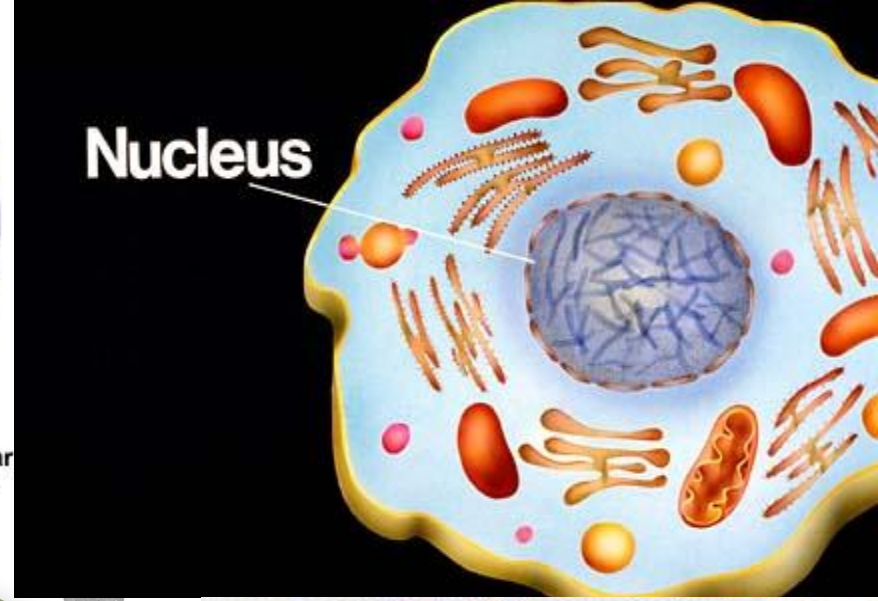
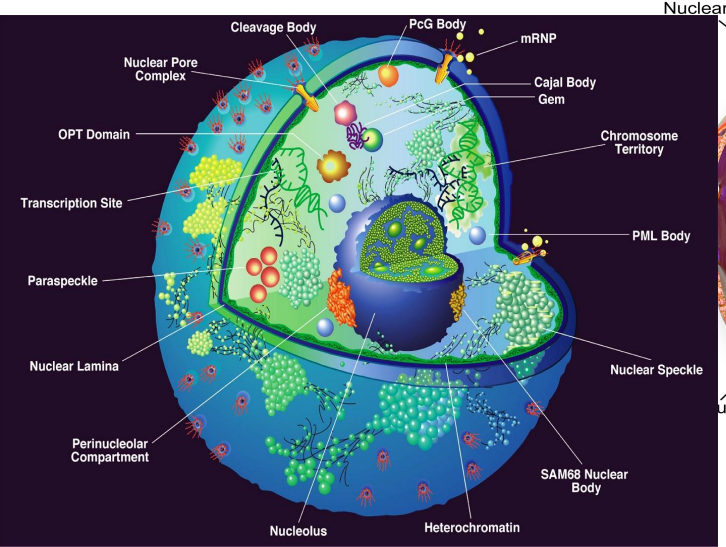
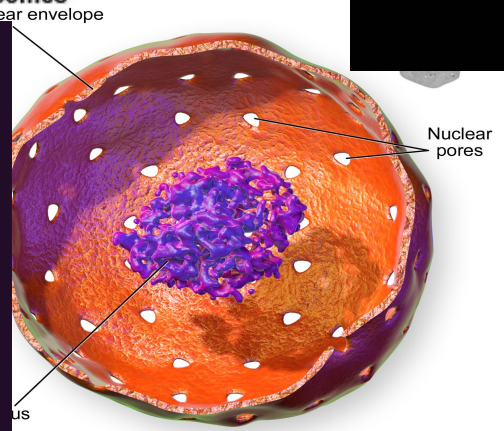


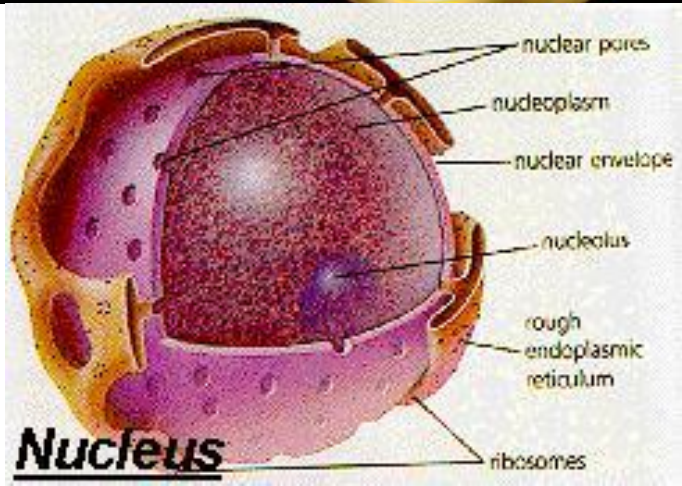
Figure 1







Nucleus



We want to know what analogy you can come up with to describe the nucleus. Be creative!

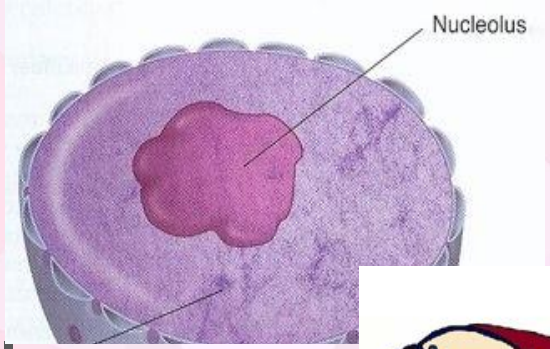
Nucleolus

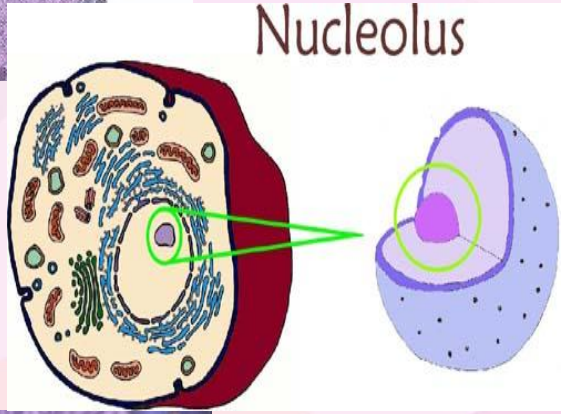
- **The Nucleolus is where the assembly of ribosomes begin.**
- **This organelle is found in the following organisms:**

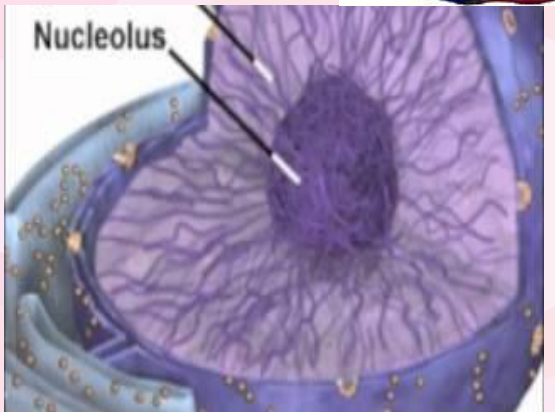
  Animal cells

  Plant cells

- **This organelle is not part of a bacterium.**

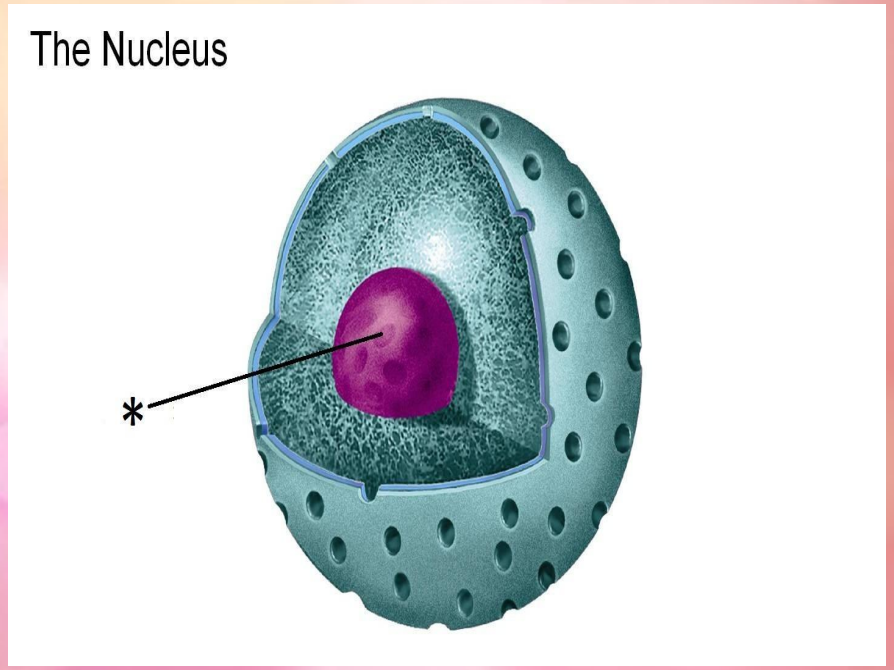


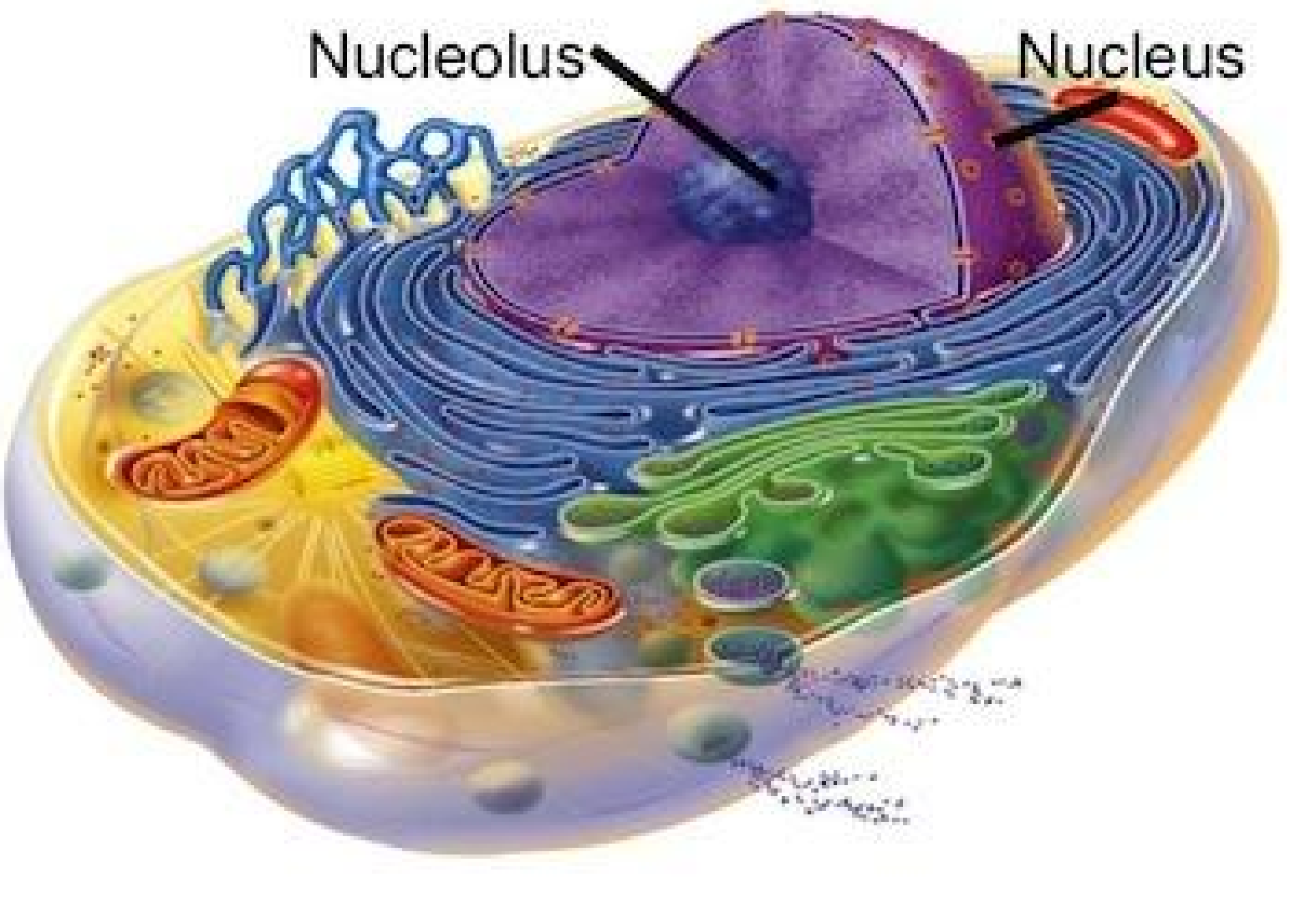




Nucleolus Study Tips

- The nucleolus a round structure.
- The nucleolus gathers all the ribosomes before releasing them to the rough E.R.
- Think of it as a delivery man packaging packages to ship out.

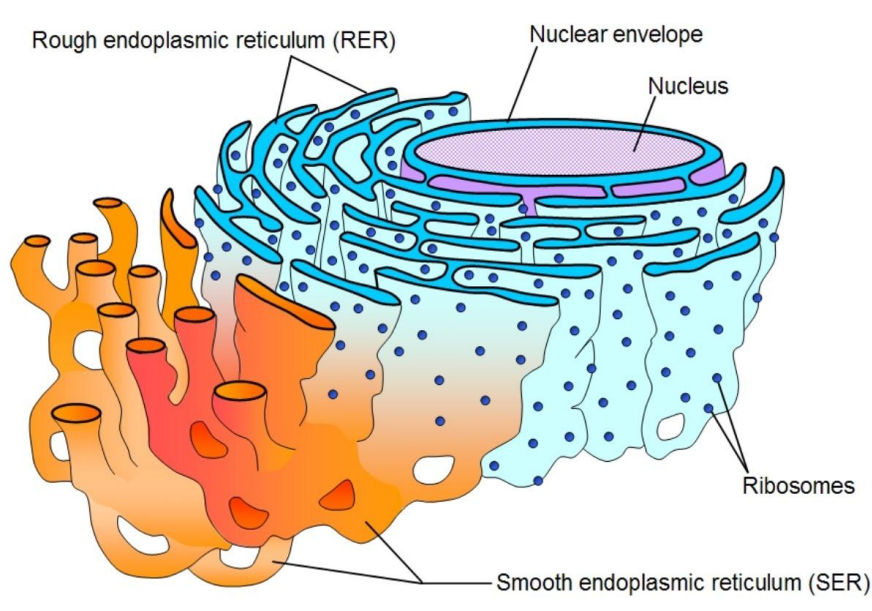



Nucleolus
Nucleus

How do the nucleus and nucleolus compare in function?

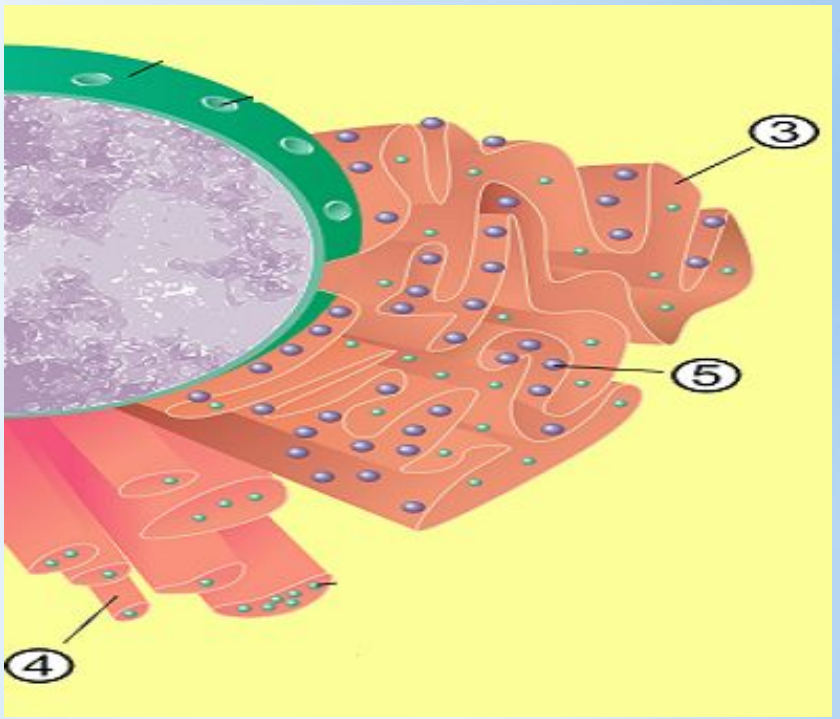
Endoplasmic Reticulum

- Endoplasmic Reticulum assembles the wall of the cell membrane along with other materials exported from the cells.
- This organelle is located in the Animal Cells.
- This organelle is also located in Plant Cells.
- This organelle is not located in Bacteria.



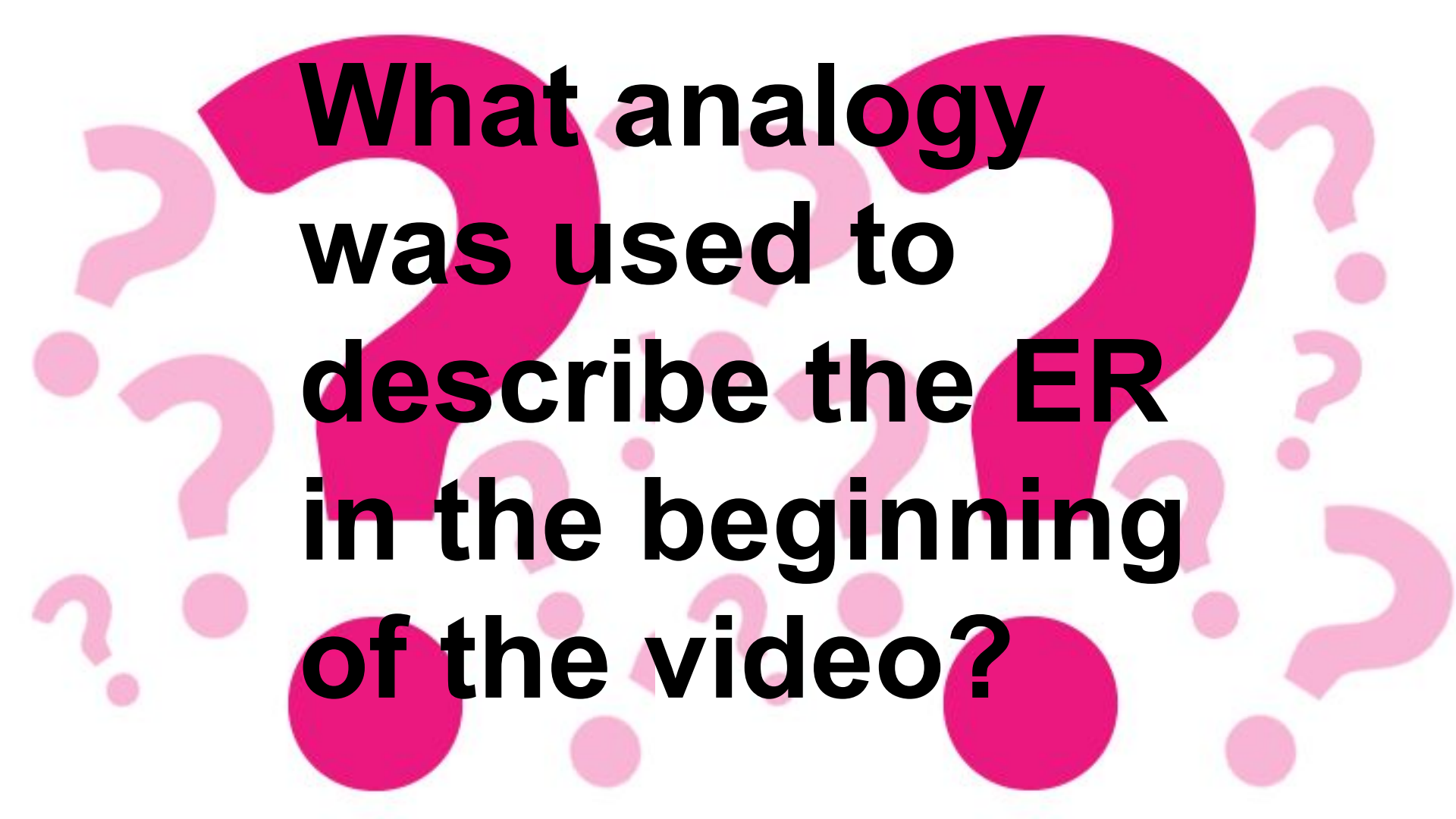
ER Study Tips

- You can think of the smooth ER as a factory manufacturing many of the products that a cell needs to function. Exactly what it makes depends on the type of cell.
- You can also think of it as a hospital the word ER.



https://m.youtube.com/watch?v=eH5k8XYKycs

Pay attention closely to the video to answer the question that follows.


What analogy was used to describe the ER in the beginning of the video?

The ABC's of the Golgi

It's note taking time!!!

Copy this down!

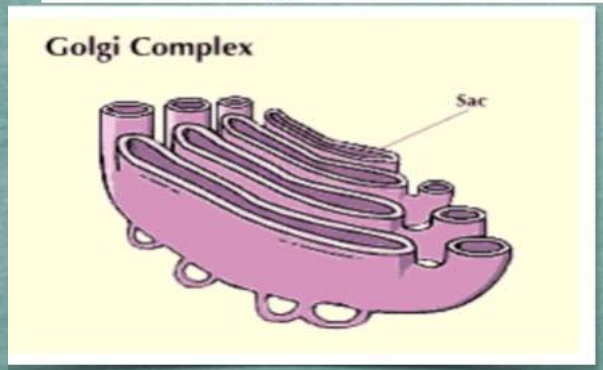
A- Apparatus

B-Body

C-Complex

The Golgi complex is found in animal and plant cells.

Functions of the Golgi Body



-The Golgi apparatus modifies, changes ,sorts and packages proteins and other materials for the endoplasmic reticulum for storage in the cell, or to be released

-The Golgi apparatus gathers simple molecules and combines them to make molecules that are more complex

-The sacs or folds of the Golgi apparatus are called cisternae.

-It is also involved in the transport of lipids around the cell, and the creation of lysosomes

STUDY TIPS

One way you can remember the Golgi Apparatus is the word apart in apparatus. The Golgi apparatus sorts apart and packages protein.

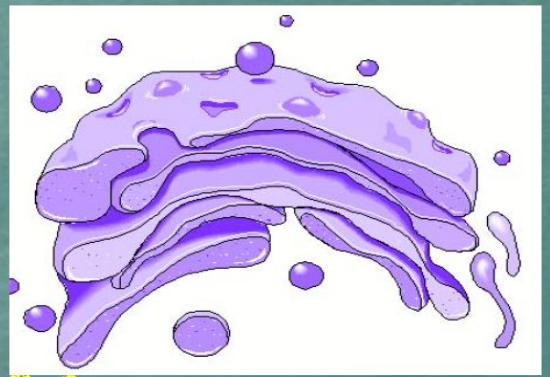
Another way you can remember the Golgi complex is to think of your mother. Before you leave the house, usually she would check your outfit to make sure it's appropriate. She may make you modify your outfit, change it completely, or make you store it in your drawer.

Fun Facts, Pictures, and Mini-Quiz

Each stack has a different orientation.

This organelle was named after Camillo Golgi (an Italian scientist)

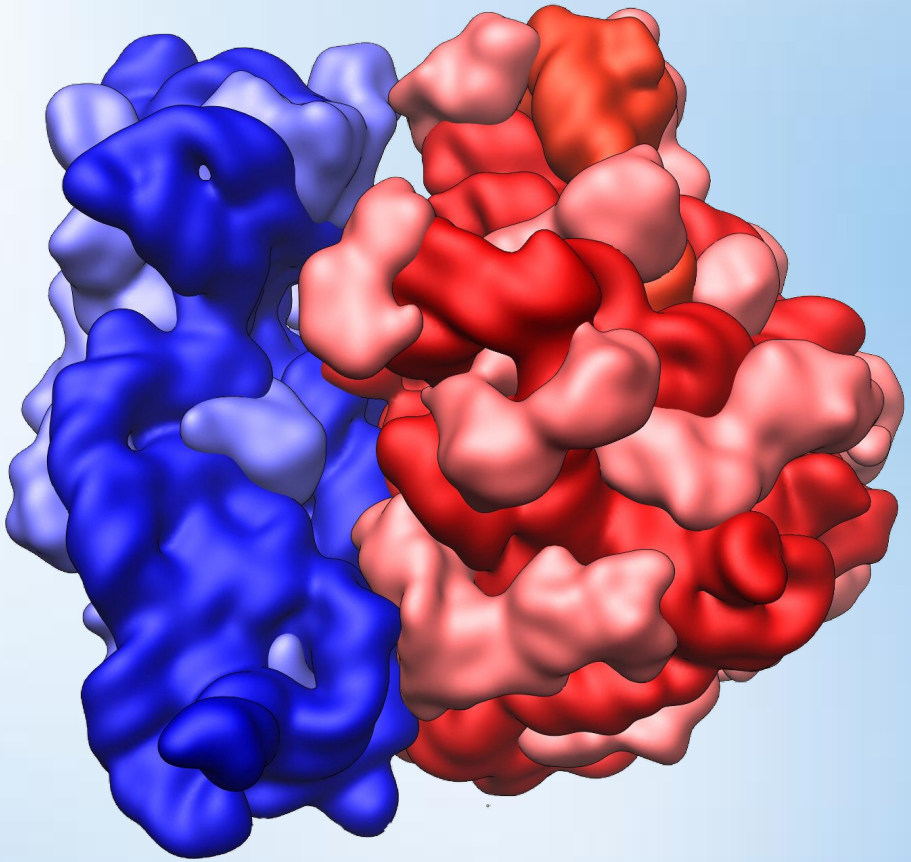
An individual Golgi usually has 4 to 8 cisternae.



What are the three names for the Golgi?

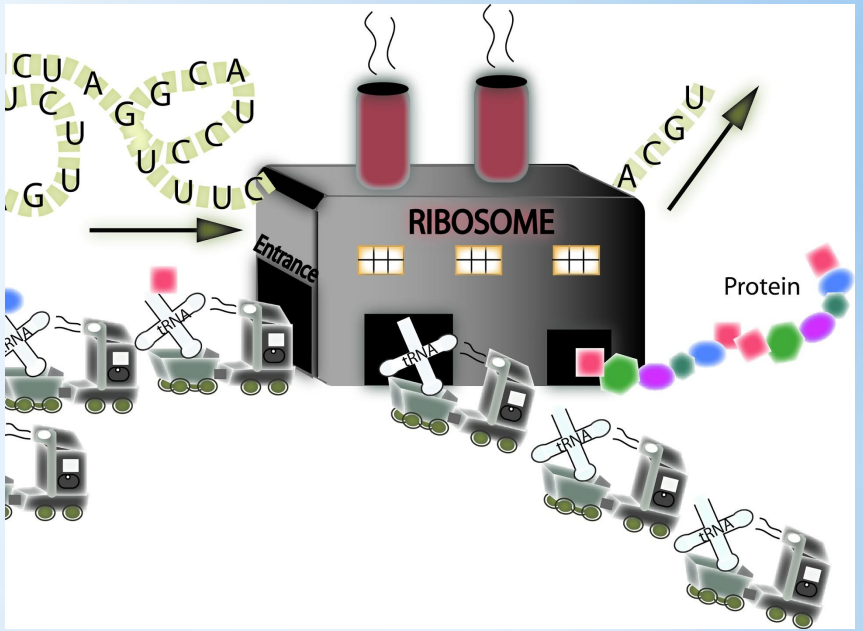
Ribosomes

- Ribosomes are small particles of RNA and protein found throughout the cytoplasm in all cells.
- Produce proteins by following coded instructions that come from DNA.
- The most abundant yet smallest of all organelles.
- They are present in plant and animal cells, but not in bacteria.

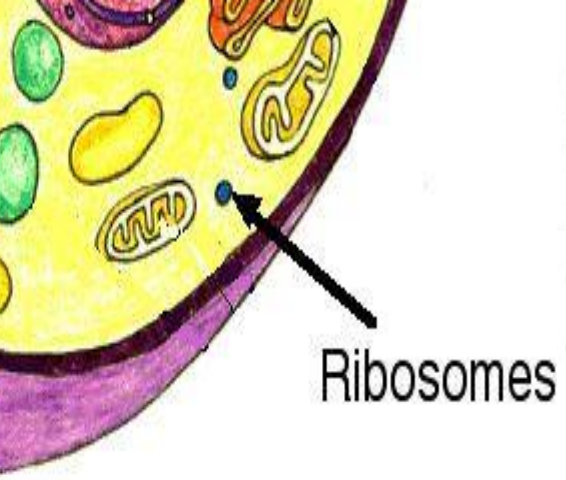


Ribosomes Study Tips

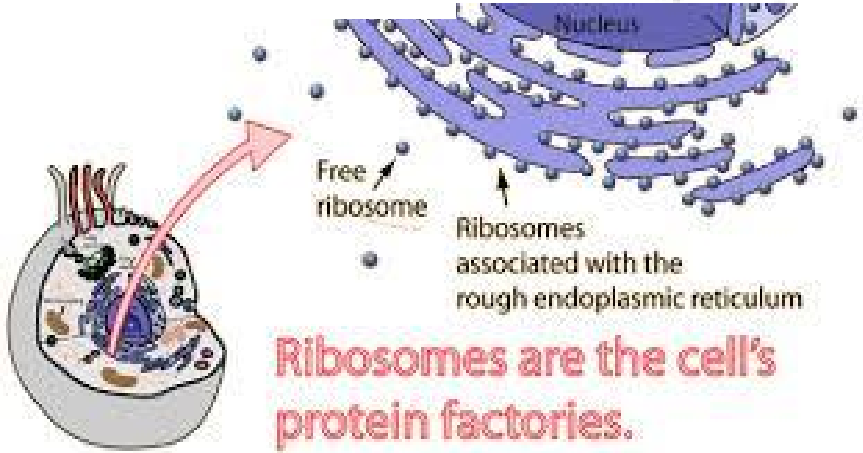
- Imagine the ribosomes as small machines in a factory.
- They produce what their boss, the DNA, tells them to. Which in this case are to make proteins.
- If a factory (cell) is actively making more products (protein), then they have large numbers of machines (ribosomes).



Ribosomes



Ribosome



Ribosomes are the cell's protein factories.