

HELLO!

Scientific project



Cellology

Introduction:

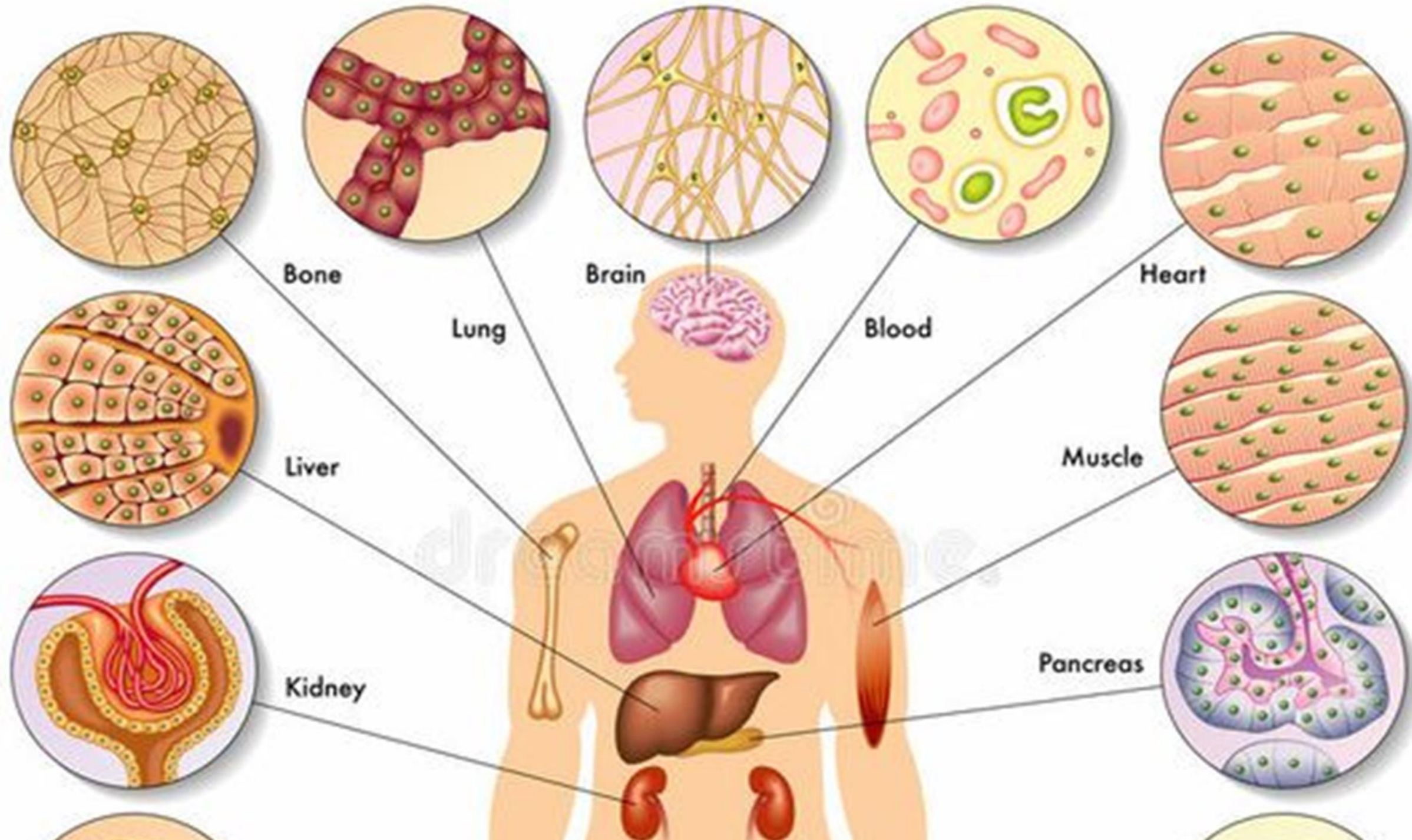
Cells are tiny building blocks that make up all living things. They are like the bricks that form a house, but much smaller. Every living organism, from plants and animals to us humans, is made up of cells. These cells work together to keep the living thing alive and functioning.



General Features



Cells have some common features. They are like little bags that hold everything a living thing needs to survive. Each cell has a special «skin» called the cell membrane, which acts like a fence, keeping the insides safe and protected. Inside the cell, there is a control center called the nucleus that holds the cell's instructions.



BACTERIA



Types of Cells

The main types are plant cells and animal cells. Simpler organisms, including bacteria, have simpler cells. They have a membrane and cytoplasm but no nucleus.

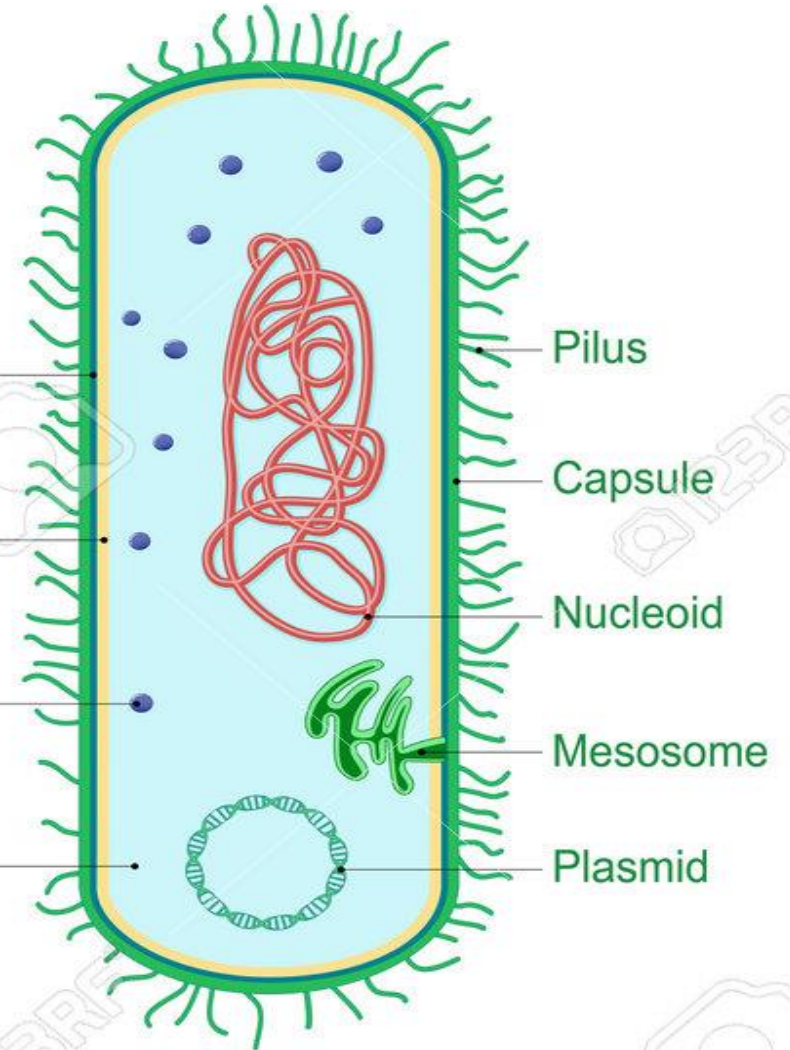
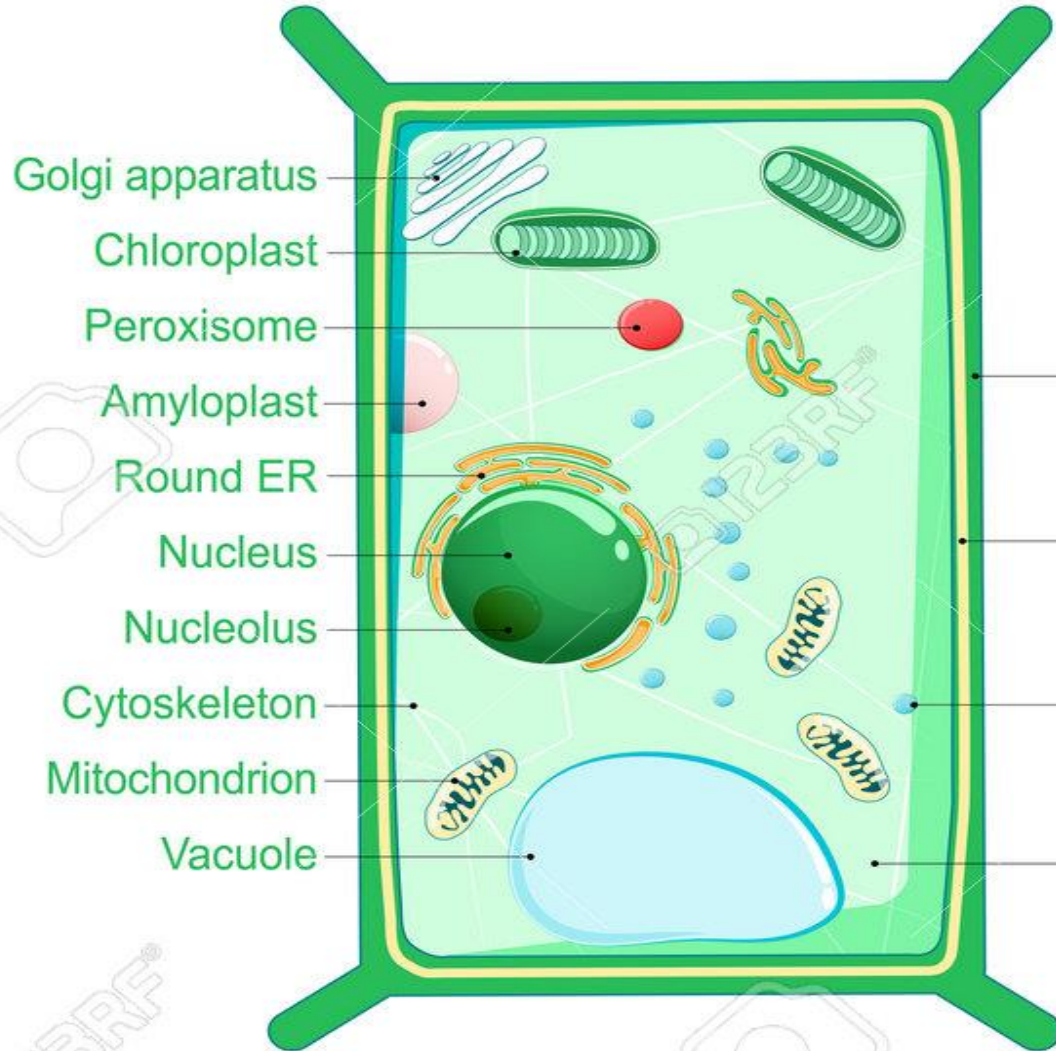
In plant cells, a rigid wall surrounds and protects the cell membrane. The wall is made of a woody substance called cellulose. A plant's cell walls make the plant hard enough to grow tall.



Plant cell




Bacterial cell







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Parts of a Cell and Their Functions

Cells are made up of smaller parts, just like a house has rooms. Each part, called organelles, has a specific job to do. Here are some important ones:

-  **Nucleus:** This is like the cell's control center or brain. It holds the cell's instructions, which tell it what to do and how to grow.
-  **Cytoplasm:** It's like a jelly filling inside the cell that holds all the other parts together.
-  **Mitochondria:** These are like tiny powerhouses. They turn food into energy that the cell can use to do its work.

-  Cell Membrane: It's like the cell's protective fence. It controls what goes in and out of the cell.
-  Endoplasmic Reticulum (ER): This is like a transport system inside the cell. It helps move things around.
-  Golgi Apparatus: This part packages and sends out proteins and other materials from the cell.
-  Vacuole: It's like a storage space in the cell. It holds water, nutrients, and waste.
-  Chloroplasts (in plant cells): These help plants make food using sunlight. This process is called photosynthesis.
-  Each part works together like a team to keep the cell healthy and functioning properly, just like how all the rooms in a house work together to make it a comfortable place to live.

Membrane

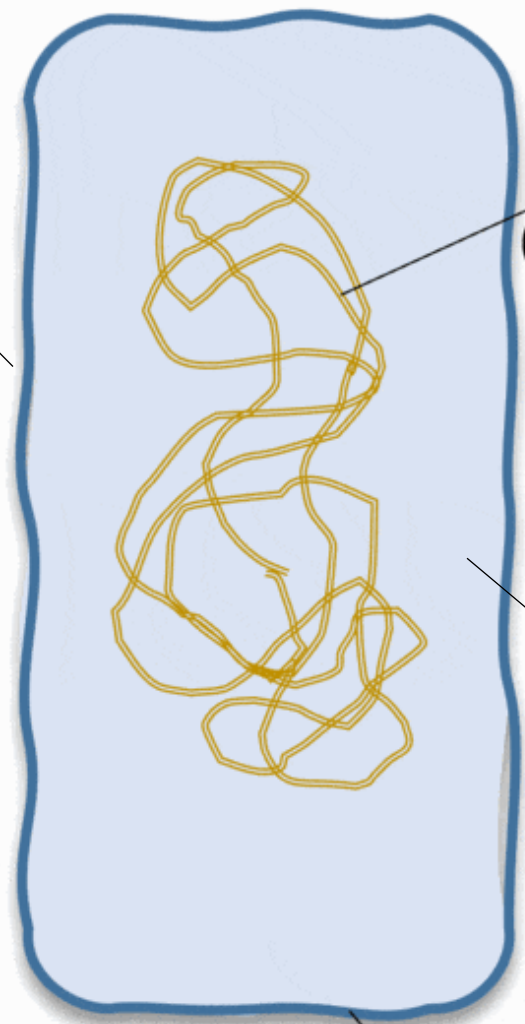
nucleoid

(bacterial chromosome)

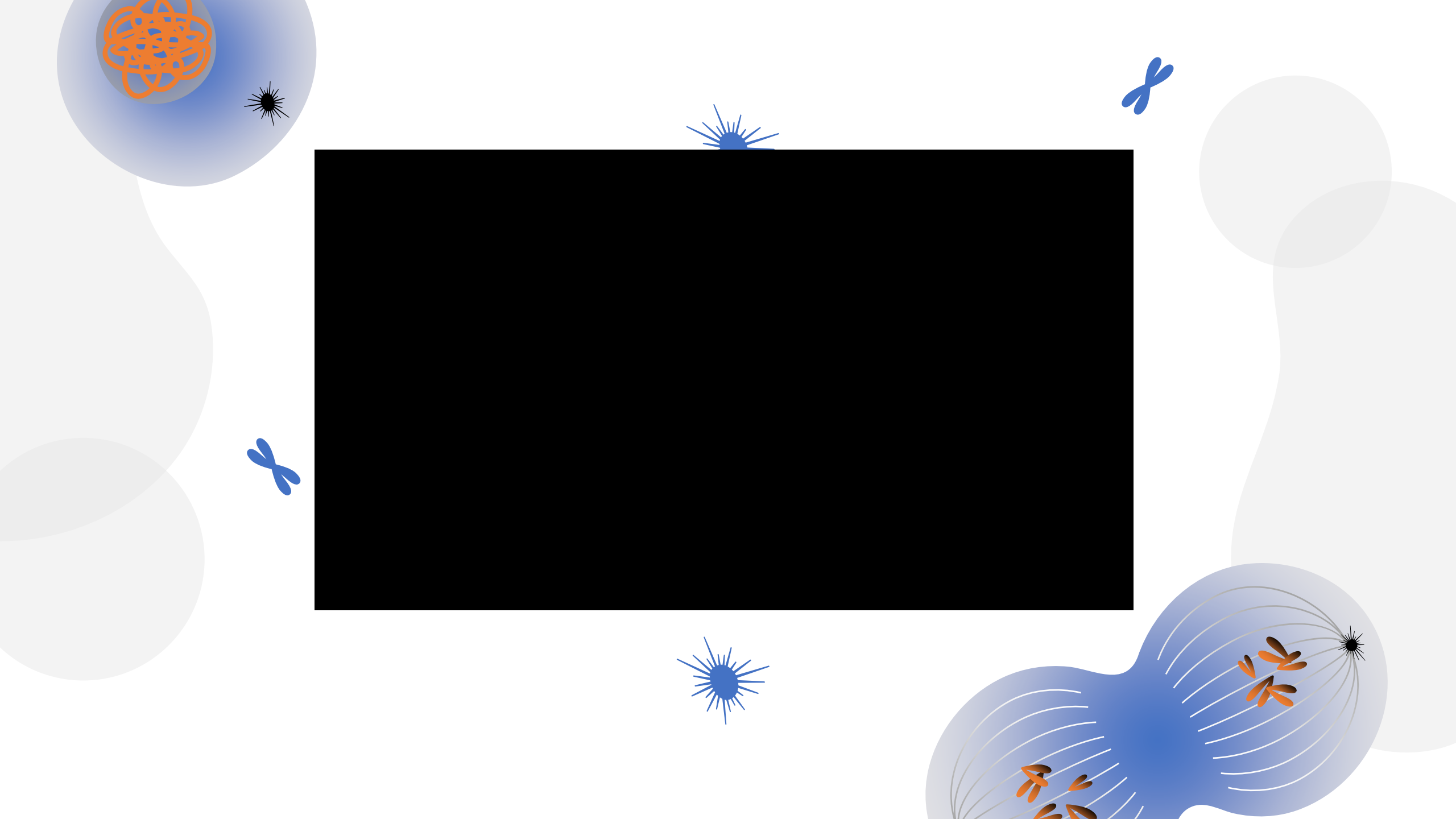
cytoplasm

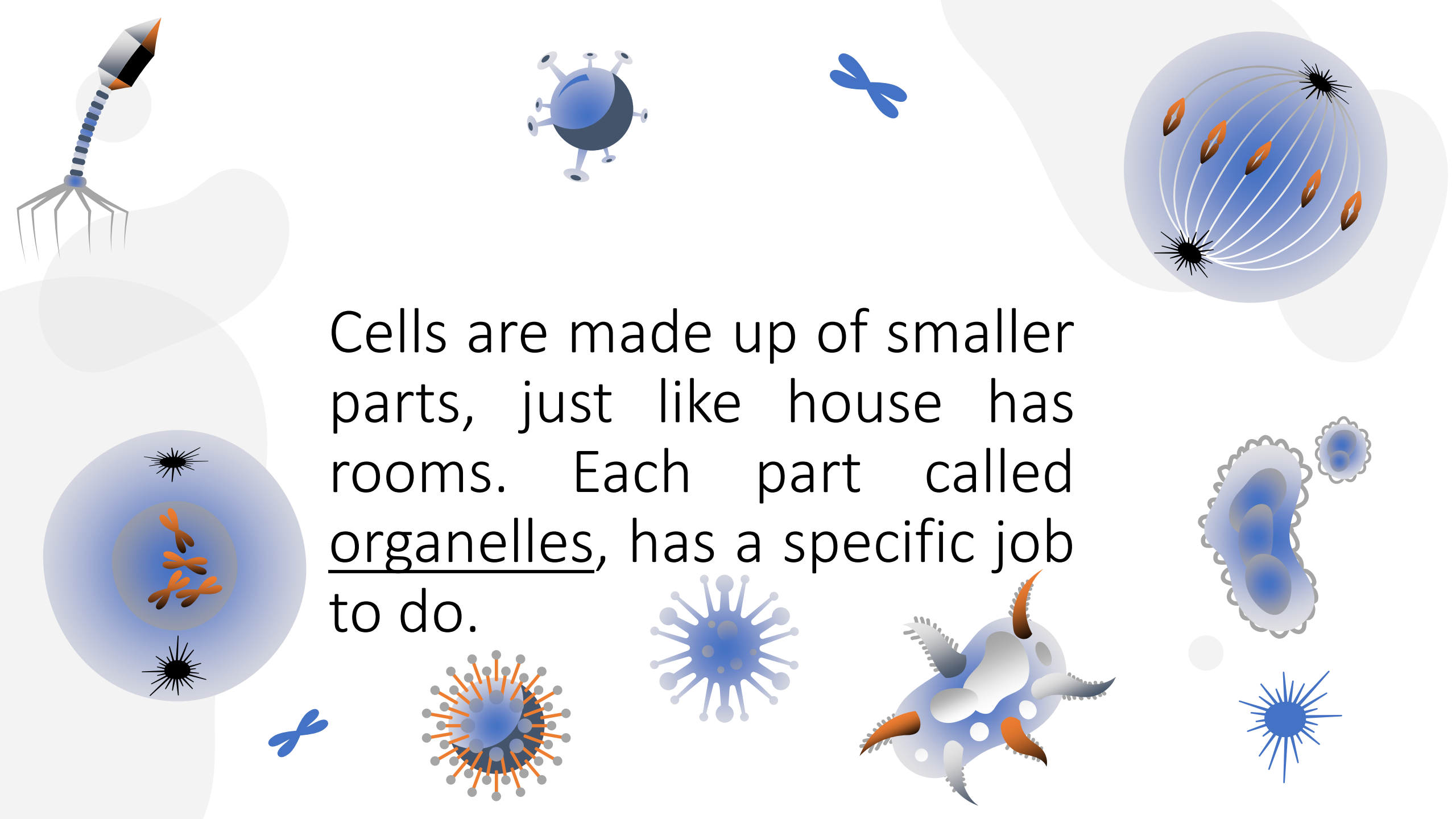


plasmid




bacterial cell





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Conclusion