

KNOWS THIS



1. The nucleus is the control center of the cell, containing the cell's genetic material (DNA) and the nucleolus.

2. Mitochondria are the powerhouses of the cell, where cellular respiration occurs, converting nutrients into energy (ATP).

3. The Golgi apparatus is a series of stacked, flattened sacs that process and transport proteins and lipids.

4. Endoplasmic reticulum (ER) is a network of membranes involved in protein synthesis and transport. It is divided into rough ER (studded with ribosomes) and smooth ER (lacking ribosomes).

5. Lysosomes are organelles containing digestive enzymes that break down waste materials and cellular debris.

6. Peroxisomes are organelles that contain enzymes for the breakdown of very long chain fatty acids and the detoxification of harmful substances.

7. Vacuoles are large, fluid-filled sacs that store water, nutrients, and waste products. They help maintain the cell's internal pressure and pH.

8. Centrioles are cylindrical structures that play a role in cell division, specifically in the formation of the spindle fibers.

9. The cell membrane is a phospholipid bilayer that separates the cell from its environment and regulates the movement of substances in and out of the cell.

10. The cytoskeleton is a network of protein fibers that provides structural support and facilitates the movement of organelles and materials within the cell.

Organelle	Function
Nucleus	Stores genetic material (DNA) and controls cell activities.
Mitochondrion	Produces energy (ATP) through cellular respiration.
Golgi apparatus	Processes and transports proteins and lipids.
Endoplasmic reticulum	Involved in protein synthesis and transport.
Lysosome	Breaks down waste materials and cellular debris.
Peroxisome	Breaks down very long chain fatty acids and detoxifies harmful substances.
Vacuole	Stores water, nutrients, and waste products; maintains cell pressure.
Centrioles	Involved in cell division (mitosis and meiosis).