

Cell Structure and Function

Cells are the fundamental unit of life in all living organisms. Prokaryotic cells, such as bacteria, do not have a nucleus, while eukaryotic cells, including plant and animal cells, do. The nucleus contains DNA and controls cellular activities. Other organelles include mitochondria (the powerhouse of the cell), endoplasmic reticulum (site of protein and lipid synthesis), and the Golgi apparatus (which modifies and packages proteins). The cell membrane controls the movement of substances in and out, while the cytoplasm holds the organelles in place. Plant cells also have chloroplasts and a rigid cell wall.

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