



What is the primary function of a vacuole in a cell?

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- A. To store water and other substances
- B. To transport materials within the cell
- C. To generate energy for the cell
- D. To provide structural support for the cell

Show Answer...

Correct Answer: A. To store water and other substances

Explanation:

The primary function of a vacuole in a cell is to store water and other substances such as enzymes, ions, and waste products. Vacuoles are found in plants and some protist cells and have a membrane called tonoplast that surrounds them which separates the content inside the vacuole from the rest of the cell. They also play a role in regulating the cell's volume and pressure.

Describe the function of the vacuole?

A vacuole is a membrane-bound organelle that is present in eukaryotic cells, particularly in plant and some protist cells. The primary function of the vacuole is to store a variety of substances, such as water, enzymes, ions, and waste products. The vacuole also plays a role in regulating the cell's volume and pressure. The membrane that surrounds the vacuole is called the tonoplast, which separates the contents of the vacuole from the rest of the cell. This helps to maintain the chemical environment within the cell and protects the cell from the toxic effects of the stored substances. Additionally, some vacuoles have specialized functions like the contractile vacuole in protozoa that help to maintain the osmotic balance. Vacuoles also store pigments and help in plant growth and development. They also play a crucial role in the process of autophagy, in which cells break down and recycle their own components.