

Topic: Cell Organelles

B.Sc. Botany Hons. III

Paper: V Group: A

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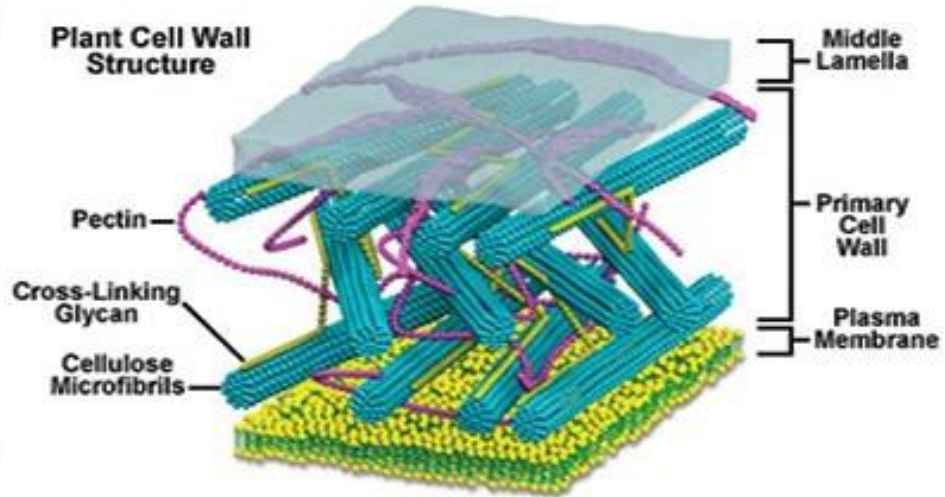
Cell Wall

An additional non-living layer present outside the cell membrane in some cells that provides structure, protection, and filtering mechanism to the cell is the cell wall.

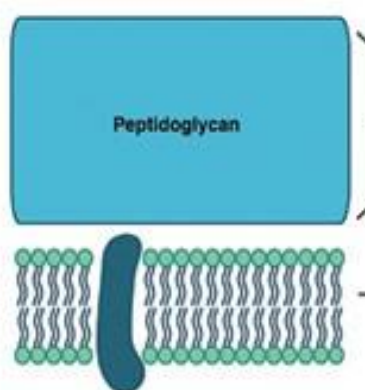
Structure

- In a plant cell, the cell wall is made up of cellulose, hemicellulose, and proteins while in a fungal cell, it is composed of chitin.
- A cell wall is multilayered with a middle lamina, a primary cell wall, and a secondary cell wall.
- Middle lamina contains polysaccharides that provide adhesion and allows binding of the cells to one another.

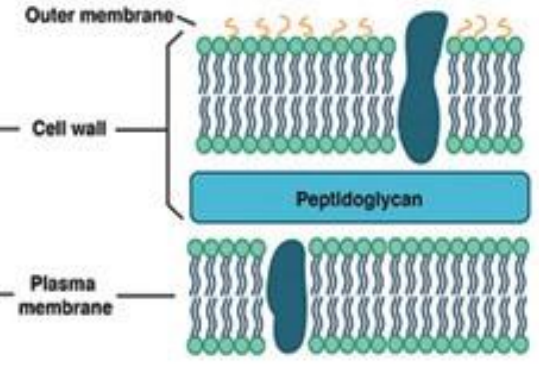
Plant Cell Wall Structure



Gram-positive bacteria



Gram-negative bacteria



- After middle lamina is the primary cell wall which is composed of cellulose.
- The last layer, which is not always present, is the secondary cell wall made of cellulose and hemicellulose.

Functions

- The critical function of the cell wall is protecting and maintaining the shape of the cell.
- It also helps the cell withstand the turgor pressure of the cell.
- It initiates cell division by providing signals to the cell and allows the passage of some molecules into the cell while blocking others.