Characteristics of plant cells

Plant cells have cell walls composed of **cellulose**, **hemicelluloses**, and **pectin** and constructed outside the cell membrane. Their composition contrasts with the cell walls of fungi, which are made of **chitin**, of bacteria, which are made of **peptidoglycan** and of archaea, which are made of **pseudopeptidoglycan**. In many cases lignin or suberin are secreted by the protoplast as secondary wall layers inside the primary cell wall. Cutin is secreted outside the primary cell wall and into the outer layers of the secondary cell wall of the epidermal cells of leaves, stems and other above-ground organs to form the plant cuticle. Cell walls perform many essential functions. They provide shape to form the tissue and organs of the plant, and play an important role in intercellular communication and plant-microbe interactions.[1]

The cell wall is flexible during growth and has small pores called *plasmodesmata* that allow the exchange of nutrients and hormones between cells.[2]