Abstract

The cells are able to acquire variety of shapes, in which cytoskeleton plays an important role. Cytoskeleton influences deposition of cell wall materials, regulates vesicle movement in cell, participates in exocytosis and endocytosis. Cortical microtubules affect celulose accumulation in cell wall and determine direction of cell expansion, although the exact connection between microtubules and cellulose remains unclear. Actin promotes growth and contributes to its spatial regulation in both tip ang diffuse growing cells. Actin is important for secretion in expanding cells but its exact functions in cell growth regulation are not explained yet. Analysis of mutants, spectroscopic methods, cytoskeletal drugs, fluorescence proteins and other methods are used to better understand how actin and microtubule cytoskeleton are integrated during plant cell morphogenesis. Epidermal and trichome cells of Arabidopsis thaliana are a good model of research and they are used for most studies.