

Abstract

Cytoskeleton is known to participate in exocytosis of yeast and animal cells. The role of plant cytoskeleton during exocytosis has not been fully understood yet. However, both actin and microtubules evidently contribute to the secretion of specific cargo proteins or cell wall components. Plant cytoskeleton influences the dynamics of exocytosis through various functions. First, secretory vesicles are delivered near the plasma membrane. Second, microtubules were shown to mark the place of exocytosis. Third, cytoskeleton is able to prevent membrane fusion by simple separation of compartments. Fourth, cytoskeleton potentially mediates the interaction between molecules of secretory apparatus. Secretion of certain cargo molecules appears to be dependent on different cytoskeleton types and the exocytosis seems to be specifically regulated in each tissue. This thesis aims to describe interplay of cytoskeleton and secretory pathway on the example of tip growth and to predict future direction of research on secretory pathway based on cellulose synthase secretory data.