

Abstract

Endocytosis and exocytosis participate in developmental program of plants. The ability to target exocytic vesicles to particular domains of plasma membrane is crucial for polarization, growth and development. Plasma membrane are recycled via various mechanisms of endocytosis which participates also in establishing plant cell polarity. To extend our knowledge of membrane transport it is essential to observe the activity of its components with high resolution in living cells of intact organisms in real time. Such methods belong mainly into the field of light microscopy and nanoscopy exceeding often diffraction limit (200 nm). Nanoscopic techniques like PALM, STORM, SIM, STED, offer multicoloured visualization of fluorophores and high resolution 3D reconstruction of cellular component. These methods have been used only sporadically in the field of plant biology but there should be no serious obstacles for they employment.

The key words: clathrin, diffraction limit, endocytosis, exocytosis, exocyst, fluorophore, plant cell, microscopy, resolution