Abstract

The basis of this study are mutant plants with ARP2/3 complex lacking in one of its subunits (*arpc5* and *arp2*). These plants also express CSC subunit CESA6 of primary cell wall tagged by YFP. Thanks to modern imaging technologies, it is possible to observe the movement of tagged cellulose synthase complexes *in vivo* at plasmatic membrane. Kymograph analyses was used to measure the velocity of CESA complexes. In addition to observing CESA complexes directly on the plasma membrane, experiments were made to regenerate cell walls of protoplasts of *Arabidopsis thaliana* plants *arpc5* and WT. It was found, that observed mutants *arpc5* and *arp2* have reduced velocity of CESA complexes in comparison to WT and *arpc5* protoplasts regenerate cellulose mesh of cell wall slower.

Keywords: Cellulose synthesis, ARP2/3 complex, CESA, CSC velocity, *arpc5*, *arp2*, *Arabidopsis thaliana.*