

THE ARP2/3 COMPLEX AS A KEY FACTOR OF ACTIN POLYMERIZATION

Summary

Directed motility of the cell is strictly dependent on regulation of the assembly/disassembly of actin filaments. New formed „daughter” filaments press against the membrane, thus generating a protrusive force, which is necessary for the initial stage of the movement. Precisely ordered geometry of „dendritic actin brush” results from the action of the Arp2/3 complex i. e. actin polymerization. The complex composition of seven evolutionarily conserved subunits among Eucaryota indicates the uniformity of its biological functions in the cell. Consequently, the Arp2/3 complex plays an important role not

only in many physiological processes, such as embryogenesis, development of tissues, inflammatory response, wound healing, but also in propagating themselves of some intracellular pathogens through of the host's plasma. Moreover, it has been shown, that the most suitable model of the Arp2/3 complex function is „the dendritic nucleation model”. The emerging issues requiring explanation seem to be interactions of individual subunits with each other, with „mother” and „daughter” filament, as well as with nucleation promoting factors, in the process of actin polymerization according to this model.