

Microtubule cytoskeleton is a dynamic filamentous network, whose reorganization underpins important cellular processes, such as cell motility or cell division. This remodeling highly depends on microtubule-associated proteins that can remodel individual microtubules, such as katanin. Katanin is a microtubule-associated protein that employs ATP hydrolysis to sever microtubules. This function can rapidly reorganize microtubule networks by providing fast amplification of the microtubule polymer number as well as microtubule fast degradation. The exact mechanism of microtubule severing and its regulation by katanin is largely discussed nowadays. In this project I would like to describe katanin's mechanism of action and its regulation on a molecular level.

Key words:

cytoskeleton, remodelling of microtubule networks, microtubules, microtubule severing enzymes, katanin