

P15 – Interaction of XMAP215 With Dynamic Microtubules Studied With Optical Tweezers

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The protein XMAP215 binds to the end of growing microtubules and changes the polymerization rate, promoting faster elongation. To investigate the addition of tubulin dimers to the plus end of the microtubule by XMAP215 and the dependence of the addition on the applied force, XMAP215 is tethered to a microsphere held by an optical trap. Because XMAP215 remains at the microtubule end for several rounds of tubulin addition, one can use it as a handle to hold the microtubule tip. In this way one can assess the force exerted by polymerizing microtubule and explore changing its growth dynamics under applied load with high temporal and spatial resolution.

