

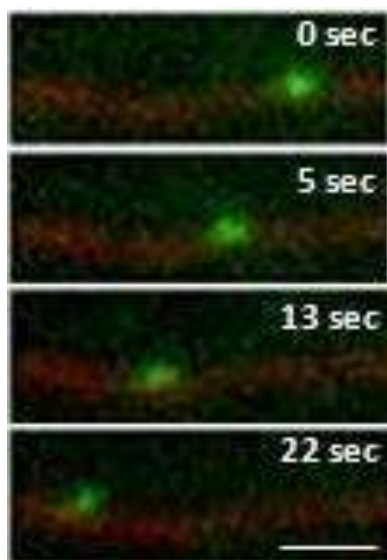


INSTITUTE FOR CELLULAR ENGINEERING

Obstacles Along Microtubules Alter Biophysical Properties of Motor Proteins

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Quantum dot labeled kinesin (green) walking processively along a microtubule (red). Scale bar, $1\mu\text{M}$

Microtubule-based transport is essential for cellular survival and is driven by the activity of motor proteins. Motor proteins use microtubules as tracks to walk throughout the crowded cellular environment. How obstacles along the microtubule affect microtubule-based transport is unclear.

We use *in vitro* single molecule techniques to investigate the effect of obstacles in the form of crowded conditions along the microtubule. These conditions mimic those of the crowded cellular environment and will provide insight to how motor proteins cope with obstacles encountered along the microtubule.