Biophysical Journal, Volume 96

Supporting Material

Pressure-induced changes in the structure and function of the kinesin-microtubule complex

Masayoshi Nishiyama, Yoshifumi Kimura, Yoshio Nishiyama, and Masahide Terazima

Supporting material

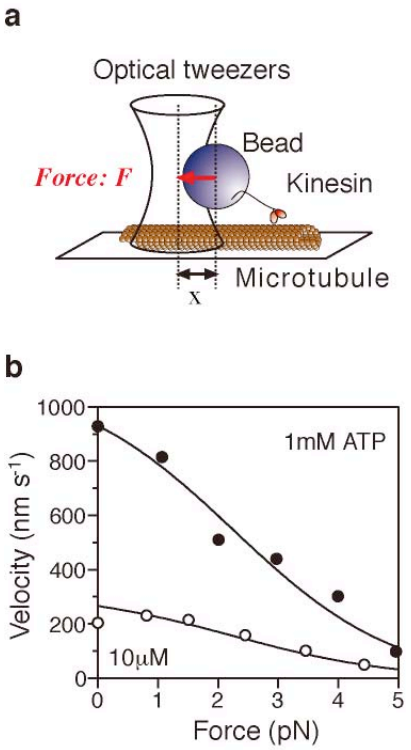

FIGURE S1

Nanomtetry of single kinesin molecules.

(**a**) Schematic diagram of the optical trapping nanomtetry system (not to scale). A bead attached to a single kinesin molecule was trapped by an infrared laser beam and brought into contact with a microtubule fixed on a glass surface. The displacement of the bead, *x*, was measured with nanometer accuracy. The force of kinesin, *F*, was calculated from the bead displacement and multiplied by the trap stiffness. (**b**) Force-velocity relations hips in the presence of 1mM (filled circles) and 10μM (open circles) ATP. The plots were obtained from the time course of single kinesin molecules (S1).

S1. Nishiyama, M., H. Higuchi, and T. Yanagida. 2002. Chemomechanical coupling of the forward and backward steps of single kinesin molecules. *Nature Cell Biol.* 4:790-797.

Supporting Video legend

Video S1 Microtubule shortening at 150 MPa. Fluorescence images of immobilized microtubule at 150 MPa were recorded with 30 sec intervals for 10 minutes. Video play back is 150x real-time.