



# Direction-Reversal of a Kinesin-5 Driven by Molecular Crowding

by  
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## Abstract:

Cut 7, the only kinesin-5 in the fission yeast *S. pombe*, is essential for mitosis. We find that full length Cut7 slides microtubules (MTs) bidirectionally, with velocity dependent on motor density and ionic strength but not MT length. By contrast, truncated Cut7 monomers drive only plus end directed MT sliding, indicating that plus end directed impulses are the basal activity and that directional reversal is an emergent property of interacting head-pairs. The data suggest a possible outline mechanism for directional reversal, in which minus ended strokes are inhibited by motor crowding, causing a basal plus end directed activity to dominate.

**Friday, Oct. 25<sup>th</sup>, 2013, 13:00**

**Room PH 127**