

Abstract Submitted
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The Characteristics of Force Production of Kinesin-5 on MCF7 Microtubules MITRA SHOJANIA FEIZABADI, Seton Hall University — Unlike neural mammalian microtubules with class II of beta tubulin as the major beta tubulin in their compositions, MCF7 microtubules composed of 0% class II beta tubulin isotype, 39.1% class I beta tubulin isotype, 2.5% class III beta tubulin isotype and 58.4% class IV beta tubulin isotype. Recent studies have revealed that function of some of motor proteins can be affected by the structural composition of microtubules. In this work, we will show how the function of mitotic kinesin (Kin-5) under external load changed when moving along bovine versus MCF7 microtubules. Along MCF7 microtubules, the detachment force was reduced and the force-velocity curve was different as compared to those related to bovine brain. We will also show that the elimination of the C-terminal tails made the transport almost similar to the two sets of microtubules. This suggests that the C-terminal tails of tubulin plays a regulatory role in Kinesin-5's function.

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