

TIRF Analysis of Pavarotti Kinesin Accumulation Along Cortical Microtubules during Cytokinesis

E. R. Griffis,¹ R. D. Vale²; ¹CMP, HHMI/UCSF, San Francisco, CA,
²Physiology Course, Marine Biology Laboratory, Woods Hole, MA

Pavarotti, the *Drosophila* homolog of the MKLP1 kinesin is essential for cytokinesis in *Drosophila* S2 cells. Conventional microscopy has localized Pavarotti to the central spindle and to areas of the cortex where furrow ingression initiates. Using TIRF imaging of dual labeled GFP-Pavarotti and mCherry-Tubulin, we have begun to how Pavarotti accumulates at the central furrow. An anaphase onset, we observed Pavarotti tracking along the tips of growing astral microtubules. We also find that Pavarotti strongly accumulates over time when cortical microtubules overlap at the central furrow. This stabilization of Pavarotti and these overlapping microtubules may be due to the bundling activity that has been described for this class of kinesin motors. We are now attempting to determine how the localization of Pavarotti correlates with microtubule stability, crosslinking, and cortical attachment and if the Pavarotti recruitment at microtubule tips is preceded by single motors moving to the tips of microtubules.