

# Kinetochores-Microtubule Attachment and Preanaphase Kinetochores Separation in Polyploids Require Bik1p

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## ABSTRACT

A group of microtubule plus end binding proteins, termed plus-end-tracking proteins, have been recently implicated in the control of microtubule assembly and in the formation of attachments to other cellular structures. Here we show that Bik1p, the budding yeast orthologue of CLIP-170, is a plus-end-tracking protein that links the ends of microtubules to the kinetochore.

Strikingly, Bik1p is not required for viability in haploid cells, but is essential for viability in polyploid cells. Based on this finding, a novel assay for Bik1p function at the kinetochore was developed. In polyploid cells prior to anaphase, Bik1p is required to maintain kinetochore separation and therefore contributes to a force that opposes the elastic recoil of attached sister chromatids. The finding that a protein involved in kinetochore-microtubule attachment is specifically required for the viability of polyploid cells has implications for the therapeutics of aneuploid cancer cells.