

**P058** Formin cdc12 can drive cytokinesis even in interphase  
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Cytokinesis requires that the timing of actin ring assembly and closure are properly regulated during the cell cycle. In *Schizosaccharomyces pombe*, the contractile ring assembles in early mitosis and contracts at the end of anaphase. The formin cdc12p is a key factor in ring assembly and catalyses nucleation and polymerization of F-actin within the ring. We are interested in how cdc12p activity is temporally and spatially controlled.

As part of a structure-function study, we expressed a truncated cdc12-GFP fusion protein, which lacks the C-terminus distal to the catalytic FH2 domain. In most cells, this construct induced the formation of actin rings even during interphase. These ectopic rings contained actin, myosin and other contractile ring components. Many interphase cells also went on to septate, suggesting that these contractile rings were fully functional.

Although similar phenotypes are seen in hyperactivated Septation Initiation Network (SIN) mutants, we do not see evidence for constitutive SIN activity. The ability of cdc12p to bind and nucleate actin is essential for this activity, but the mere accumulation of actin filaments in the medial region was not sufficient for ring assembly. These studies demonstrate the cdc12 formin is not only capable of controlling F-actin assembly but also has the ability to trigger the entire cytokinetic program.