

**P005** The GAP domain of CYK-4 is required for cytokinesis independent of central-spindle assembly in *C. elegans*  
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CYK-4, a protein essential for animal cell cytokinesis, is required both to localize the Rho-GEF ECT-2 to the furrow site as well as to assemble a central spindle. The N-terminus of CYK-4 supports ECT-2 localization and central-spindle assembly through association with the kinesin-6 family member ZEN-4. The C-terminus of CYK-4 contains a Rho-GAP domain, which could also function directly during cytokinesis by modulating Rho. CYK-4 has been shown to have GAP activity for all three Rho family members *in vitro*; however, a role for the GAP domain during furrow ingression has not been directly tested. Using a forward genetics approach, we isolated two fast-inactivating conditional alleles that have mutations in the CYK-4 GAP domain. These alleles uncouple CYK-4 function in central-spindle assembly from its role in promoting furrow ingression. Central-spindle assembly and ZEN-4 targeting to the central spindle are normal in embryos produced by the GAP domain mutants. Nevertheless, cortical remodeling and cytokinesis failure in the mutant embryos phenotypically resembles that in embryos depleted of CYK-4 or ZEN-4. We conclude that the GAP activity, and not its role in central-spindle assembly, is the essential function of CYK-4 in promoting furrow ingression.