Index of Online Supplemental Material:

SUPPLEMENTAL FIGURE LEGENDS

Figure S1: ARH localizes to the centrosome in different cell types, and using different antibodies. Single channel and merged images of ARH and γ-tubulin in HeLa cells **(A-C)** and bovine aortic endothelial cells. **(D-F)** Insets show magnified version of the centrosome region. Yellow pixels in the merged panel represent co-localization of ARH with γ-tubulin at the centrosome. **(D-F)** ARH similarly co-localizes with γ-tubulin at the centrosome in bovine aortic endothelial cells. **(G-I)** The localization of ARH at the centrosome in HeLa cells was verified using an ARH antibody from Dr. Linton Traub. Cells were fixed with methanol and stained with ARH (red), γ-tubulin (green) and DAPI (blue, to stain nuclei). Bar: 6.5 μm. Insets: 2.2 μm

Figure S2. ***ARH*$^{-/-}$** **MEFs reform microtubules in an identical fashion to wild-type MEFs.** wt **(A-D)** and *ARH*$^{-/-}$ MEF cells **(E-H)** were either untreated (A,E) or treated with nocodazole (5 μg/ml, 90 min) (B, F) to disrupt microtubules. Nocodazole was washed out and the cells were allowed to reform microtubules in fresh medium at 37°C for 5 (C, G) or 20 min (D, H). The microtubule organization in each case was analyzed by staining for α-tubulin (green). Nuclei were stained with DAPI (blue). Bar: 12 μm.

Video 1. Mitosis in wild-type MEF cells

Video 2. Mitosis in ARH$^{-/-}$ MEF cells

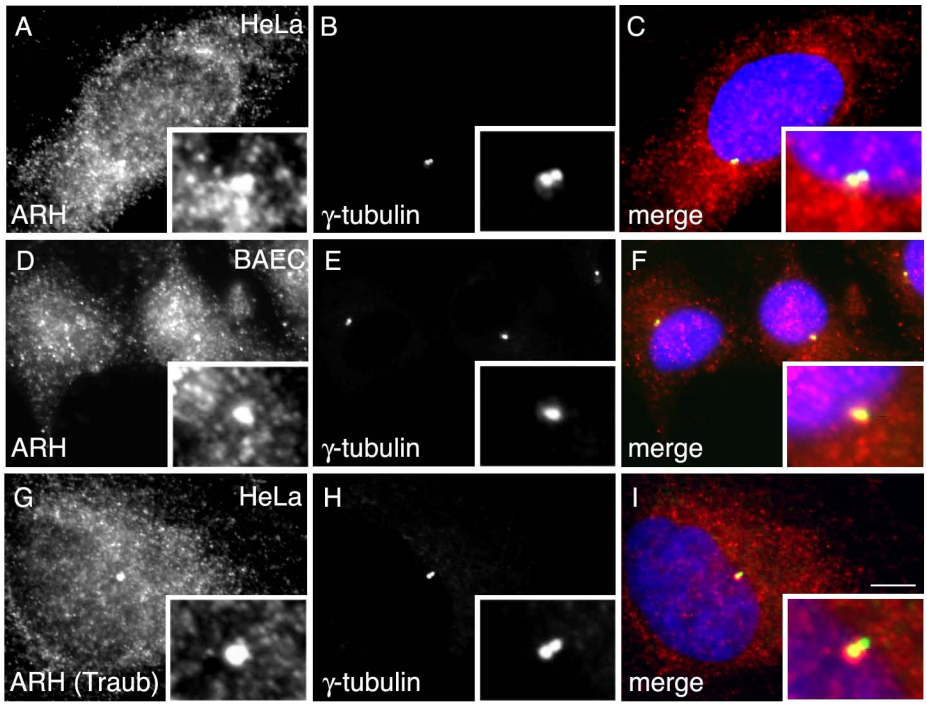
Video 3. Mitosis in wild-type MEF cells

Video 4. Mitosis in ARH$^{-/-}$ MEF cells

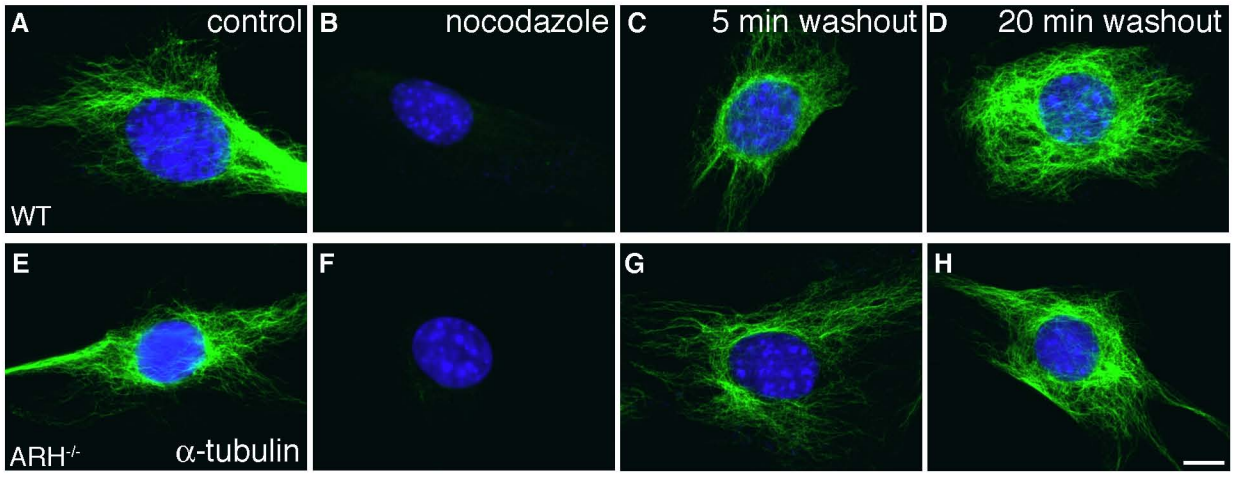
Video 5. Example of early cytokinesis defect and frank binucleate formation in ARH$^{-/-}$ MEFs.

Video 6. Mitosis in ARH$^{-/-}$ MEFs after mock rescue

Video 7. Mitosis in ARH$^{-/-}$ MEFs after pMSCV-ARH rescue



Supplemental Figure 1, Lehtonen et al 2008



Supplemental Figure 2, Lehtonen et al 2008