



Supplementary Figure 1. Characterization of an antibody raised to Plk4. (A) Immunoblot of doxycycline (Dox) inducible Plk4^{AA} RPE1 cells (Wang *et al.*, 2011). The Plk4 antibody detects overexpressed untagged Plk4^{AA} transgene, but no endogenous Plk4 is detectable. (B) Representative immunofluorescence images of RPE1 cells stained with a Plk4 antibody. Red, α -tubulin or γ -tubulin; Green, Plk4; Blue, DNA. Scale bar = 5 μ m.

Supplementary Movie 1. Normal mitotic division. Movie of RPE1^{+/-} cell co-expressing EYFP- α -Tubulin and Histone H2B-mRFP undergoing normal mitotic chromosome segregation. Filming began two days after depletion of GAPDH with siRNA. Shown in Figure 5A. One frame captured every 5 minutes.

Supplementary Movie 2. Division with asymmetric mitotic spindle. Movie of RPE1^{+/-} cell co-expressing EYFP- α -Tubulin and Histone H2B-mRFP dividing with an asymmetric mitotic spindle. Filming began two days after depletion of Plk4 with siRNA. Shown in Figure 5A. One frame captured every 4 minutes.

Supplementary Movie 3. Division with chromosome missegregation. Movie of RPE1^{+/-} cell co-expressing EYFP- α -Tubulin and Histone H2B-mRFP dividing undergoing chromosome missegregation. Filming began two days after depletion of Plk4 with siRNA. Shown in Figure 5A. One frame captured every 4 minutes.

Supplementary Movie 4. Division with multi-polar mitotic spindle. Movie of RPE1^{+/-} cell co-expressing EYFP- α -Tubulin and Histone H2B-mRFP dividing with a multi-polar mitotic spindle. Filming began two days after depletion of Plk4 with siRNA. Shown in Figure 5A. One frame captured every 4 minutes.