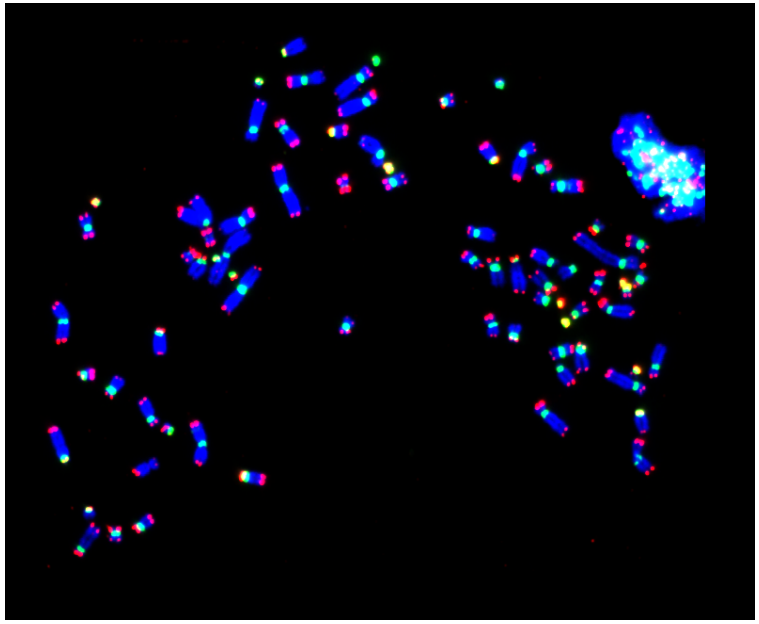
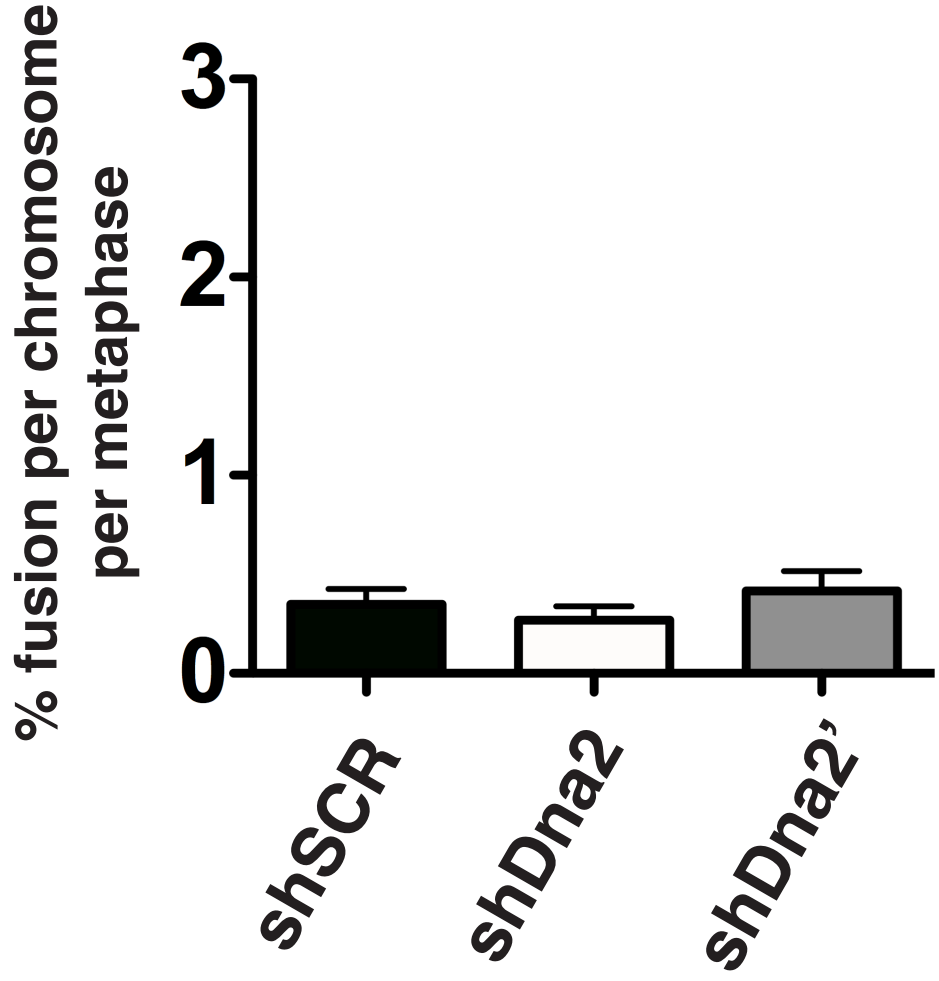
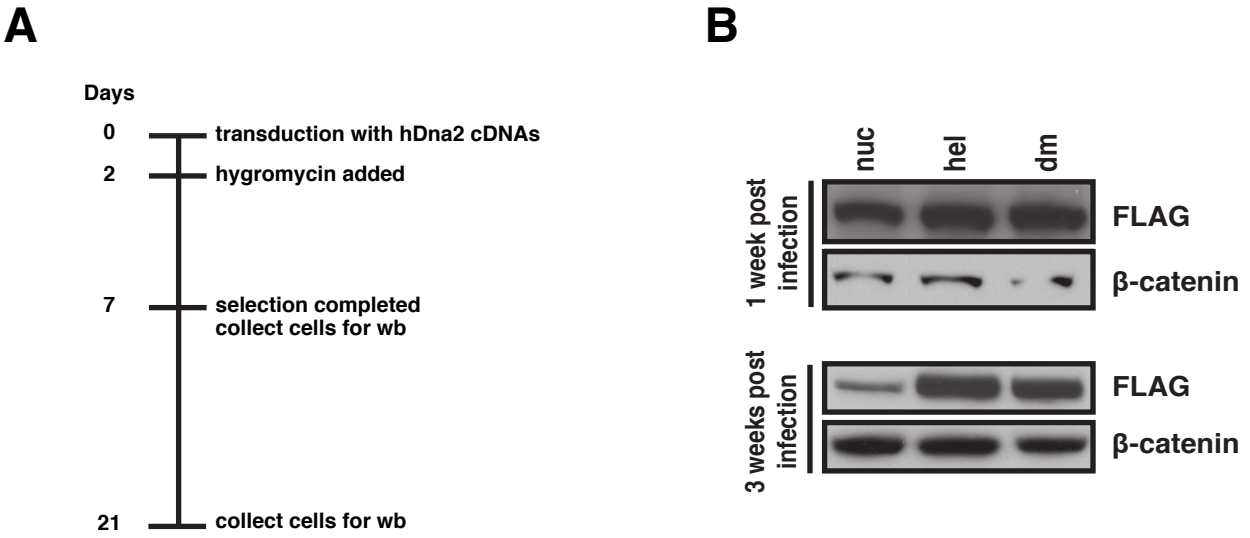
Supplementary Figure 1



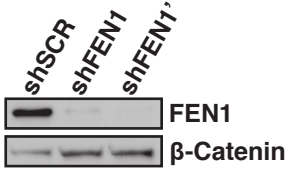
Example of metaphase



Supplementary Figure 2



Supplementary 3



Supplementary Figure Legends

SUPPLEMENTARY FIGURE 1. hDna2 depletion does not result in telomeric fusions. Metaphases were prepared from control (shSCR) or hDna2-depleted (shDna2 and shDna2') U-2- OS cells and spreads were analyzed with a telomere-specific (red) and centromere-specific (green) probe. An example metaphase from an shDna2-depleted cell is shown on the left. On the right telomeric fusions were quantified for the different cell types.

SUPPLEMENTARY FIGURE 2. hDna2 helicase activity contributes to the deleterious properties of the nuclease-deficient Dna2 mutant. A. Timeline of experimental procedure given in days. B. Western blot analysis of U-2-OS cells expressing a nuclease deficient allele (nuc), a helicase deficient allele (hel), and a nuclease and helicase-deficient double mutant allele (dm). Western blots were performed 1 and 3 weeks post-transduction. Note that the

SUPPLEMENTARY FIGURE 3. Western blot analysis of FEN1 levels in U-2-OS cells depleted of FEN1 using two independent short hairpins (shFEN1, shFEN1') compared to a control cell line (shSCR). β-Catenin was used as a loading control.