

Legends to Supplementary figures:

Supplementary figure 1: *Survivin 89-142 and Survivin C84A fail to localize to centromeres but do localize to midzone and midbody.* U2OS cells were grown on glass coverslips and co-transfected with Survivin siRNA, plasmids expressing VSV-tagged versions of the indicated Survivin proteins and with H2B-GFP to visualize the DNA. Cells were fixed in paraformaldehyde 14 hrs after release from a thymidine block. The exogenously expressed proteins were detected with mouse anti-VSV mAb (columns labeled “VSV”). Localization of VSV-tagged Survivin₁₋₁₄₂ (A), Survivin₈₉₋₁₄₂ (B) and Survivin_{C84A} (C) in prometaphase, anaphase and telophase. The abnormal anaphases (B, lagging chromosomes) are a reflection of the failure of the Survivin₈₉₋₁₄₂ mutant to reconstitute Survivin function at the centromere.

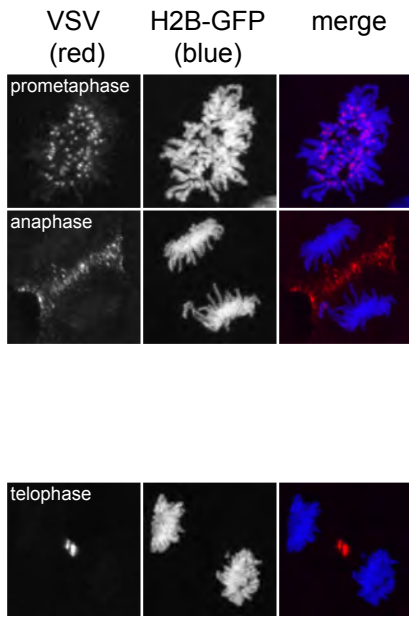
Supplementary figure 2: *Phosphorylation of the Aurora B substrate CENP-A is impaired in Survivin-depleted and Survivin₁₋₈₉, Survivin₈₉₋₁₄₂ and Survivin_{C84A} reconstituted cells.* U2OS cells were grown on glass coverslips and co-transfected with Survivin siRNA, plasmids expressing the indicated Survivin proteins and with H2B-GFP to visualize the DNA. Cells were fixed in paraformaldehyde 14 hrs after release from a thymidine block. (A) Phosphorylated CENP-A and total CENP-A were detected with specific antibodies and per cell the intensity values of 20 kinetochores were determined. Per kinetochore the pixel intensity of phosphorylated CENP-A (pCA) was divided by the pixel intensity of total CENP-A (CA). Cells designated as bright the pCA/CA pixel intensities ranged from 1.13-1.58, weak ranged from 0.30-0.63 and cells scored as negative ranged from 0.01-0.09. (B) Percentages of H2B-GFP positive prometaphases with bright, weak or neg pCA/CA intensity levels. (C) In contrast to Aurora B localization, Aurora A localization is not affected by Survivin depletion. The reduced phosphorylation of CENP-A in Survivin knock-down is therefore not due to lack of Aurora A.

Supplementary figure 3: *Expression and localization of Borealin deletion mutants in Borealin/Dasra B depleted cells.* (A) Western blot of whole cell extracts (WCE) of U2OS cells co-transfected with Borealin siRNA and VSV-tagged full-length Borealin (1-280) and Borealin N-terminal (142-280) and C-terminal (1-141) deletion mutants. Blots were probed with anti-VSV mAb. (**) indicates a background band. (B) Localization of exogenously expressed VSV-tagged full-length Borealin and its deletion mutants in the absence of endogenous Borealin (Borealin siRNA). The exogenous proteins were detected with an anti-VSV mAb.

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Supplementary figure 1

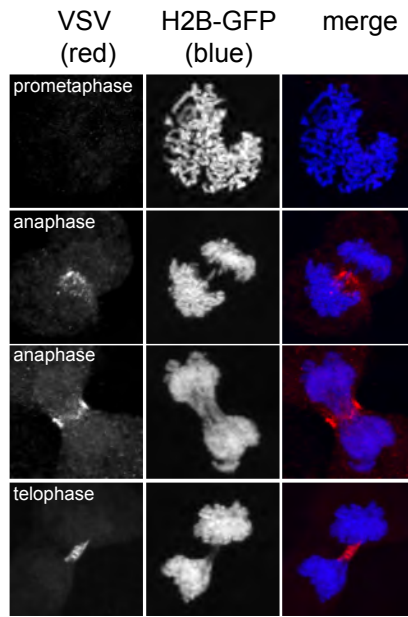
A

surv 1-142



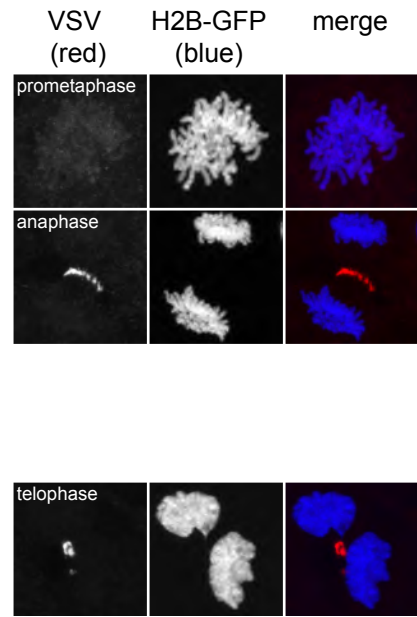
B

surv 89-142

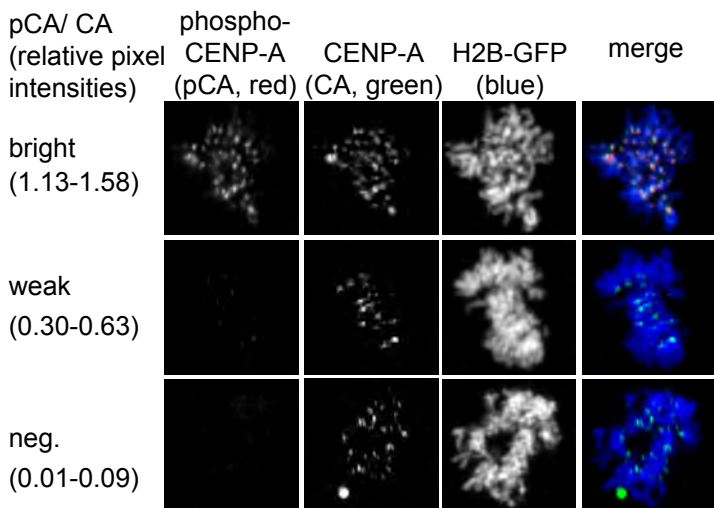


C

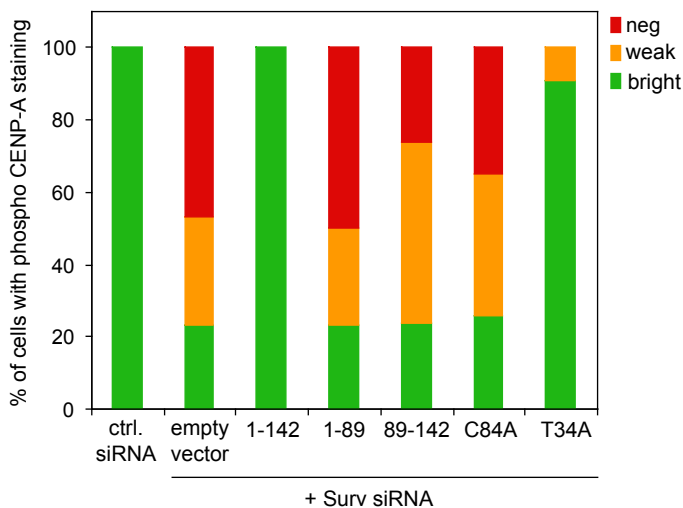
surv C84A



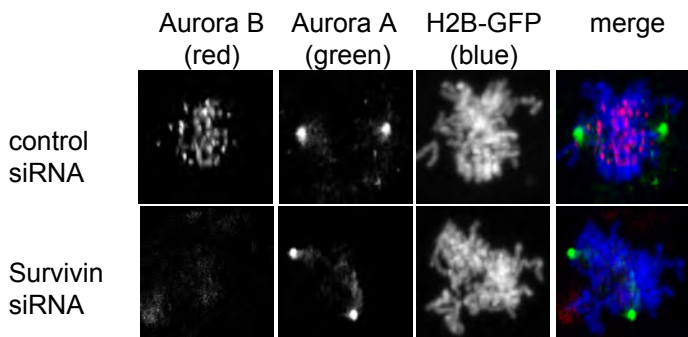
A



B

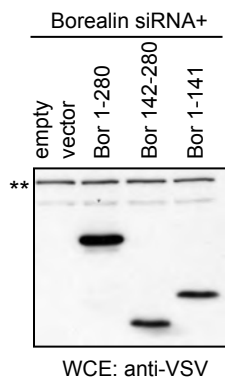


C



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Supplementary figure 3

A



B

