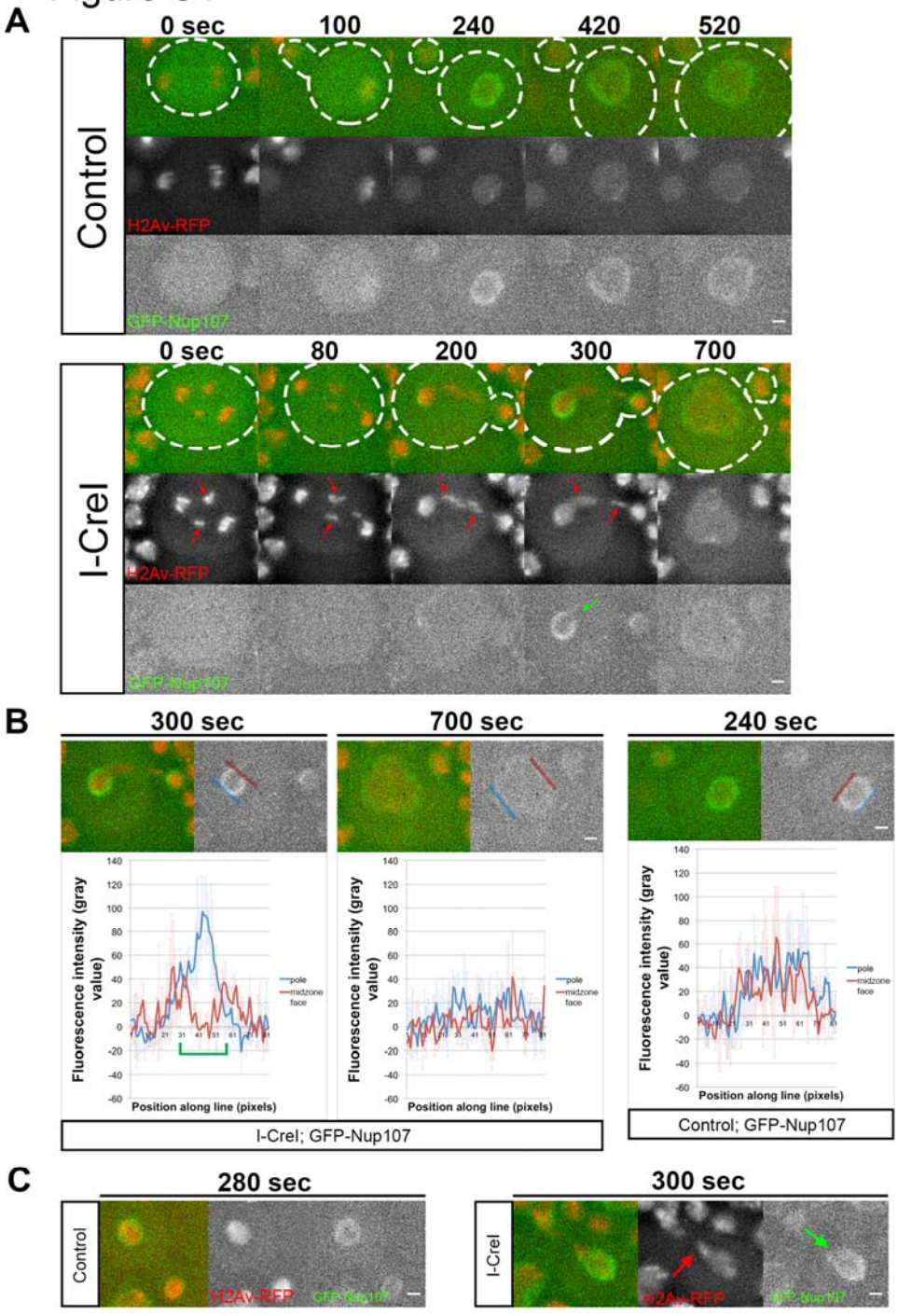
Supplemental Materials

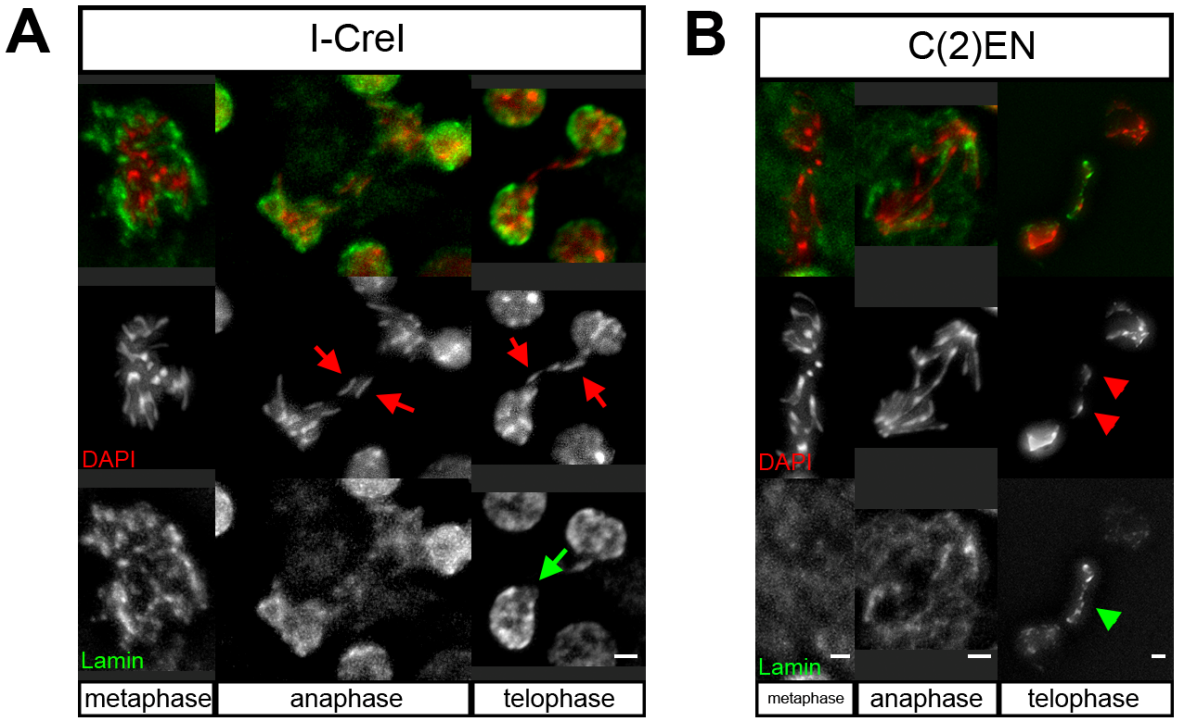
Molecular Biology of the Cell

Karg et al.

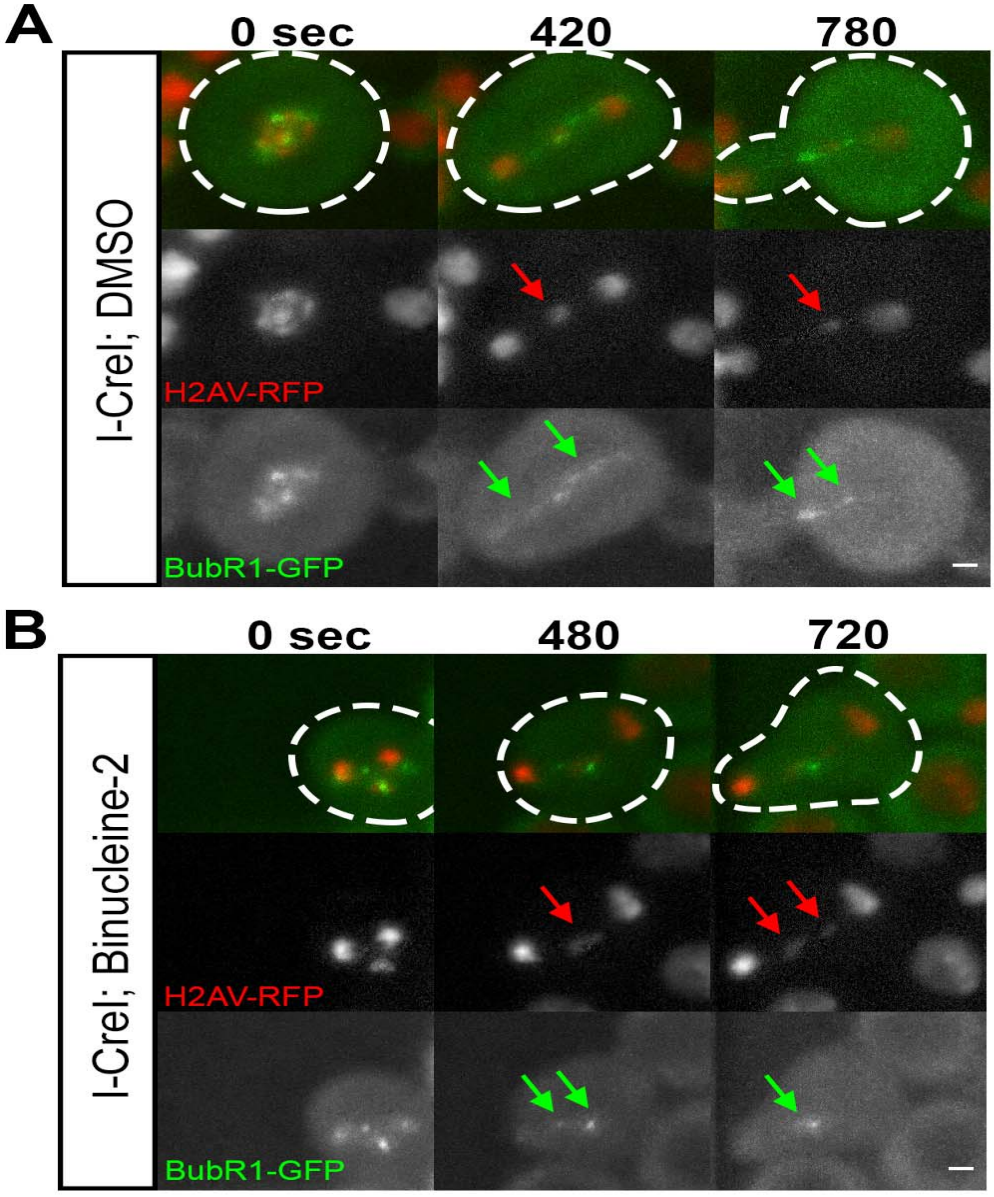
Figure S1


A
0 sec
100
240
420
520
Control
H2Av-RFP
GFP-Nup107
0 sec
80
200
300
700
I-Crel
H2Av-RFP
GFP-Nup107
B
300 sec
700 sec
240 sec
Fluorescence intensity (gray value)
Position along line (pixels)
pole
midzone
face
I-Crel; GFP-Nup107
Control; GFP-Nup107
C
280 sec
300 sec
Control
I-Crel
H2Av-RFP
GFP-Nup107

Supplemental Figure 2



Supplemental Figure 3



Supplemental Figure 1. Nuclear envelope gaps are imaged using a GFP-tagged nuclear pore protein. (A) Still frames from time-lapse movies of mitotic neuroblasts expressing GFP-Nup107 (green) and H2Av-RFP (red) without (top panel, Video3) and with (bottom panel, Video4) I-CreI-induced acentrics. Red arrows indicate acentric chromosomes. Green arrow indicates the nuclear envelope gaps. Dashed lines outline the cell. Scale bars are 2 μm.
(B) Quantification of GFP-Nup107 signal across the surface area of nuclear envelope gaps during NEF. Shown are graphs and images of the GFP-Nup107 fluorescence intensity along the midzone facing (red line) and pole facing (blue line) sections of the newly formed telophase nuclear envelopes with (left and middle panel) and without acentrics (right panel). Each graph represents an average of three measurements. Error bars indicate standard deviations. Green brackets indicate the presence of a nuclear envelope gap. Scale bars are 2 μm.
(C) Stage-matched telophase nuclei from neuroblasts with (right panel) and without (left panel) I-CreI induced acentrics. Red arrow indicates acentric. Green arrow indicates nuclear envelope gap. Scale bars are 2 μm

Supplemental Figure 2: Unlike acentric chromosome fragments, intact lagging chromosomes do not form nuclear envelope gaps. Images of fixed neuroblasts bearing I-CreI induced acentrics (A) and neuroblasts with the long compound second chromosome (C(2)EN) (B) stained with DAPI (red) and anti-Lamin antibody (green). (A) I-CreI-induced acentrics (red arrows) rejoin the main nuclear mass through a nuclear envelope gap (green arrow) during telophase. (B) In contrast, the compound second chromosome (red arrowheads) is entirely encapsulated by lamin (green arrowhead) at telophase. All scale bars are 2μm.

Supplemental Figure 3: Aurora B inhibition does not disrupt tether formation. Time-lapse images of dividing larval neuroblasts expressing H2Av-RFP and BubR1-GFP with I-CreI-induced acentrics treated with DMSO alone (A) or with the Aurora B small molecule inhibitor Binucleine-2 (B). BubR1 localization on I-CreI-induced tethers is similar in both DMSO alone and Binucleine-2 treated neuroblasts. Red arrows indicate acentrics. Green arrows indicate ectopic BubR1. Dotted lines show cell outline. All scale bars are 2μm.