

Fig. S1. Transcription inhibition of nuclear blebbing perturbations is reproducible. (A) Graph of nuclear blebbing percentages in three perturbations DZNep (gray), LMNB1^{-/-} (gold), and LA KD (dark blue) treated with no inhibitor (-), alpha-amanitin (aam), triptolide (trip), or flavopiridol (flav) for 24 hours and imaged with Hoechst. Averages are from 9 technical replicates with a total of > 300 cells. (B) Graph of the percentage of blebs that were reabsorbed during an 8-hour timelapse of VPA-treated or LMNB1^{-/-} labeled with NLS-GFP. Three biological replicates, shown as dots, compose the average, shown as a bar. VPA-treated cells were treated overnight before an inhibitor was added or not added. Inhibitors were added or not, and cells were imaged immediately afterward for 8 hours every 30 minutes. Error bars represent standard error and statistical tests are Student's t-tests, with significance denoted by * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$.

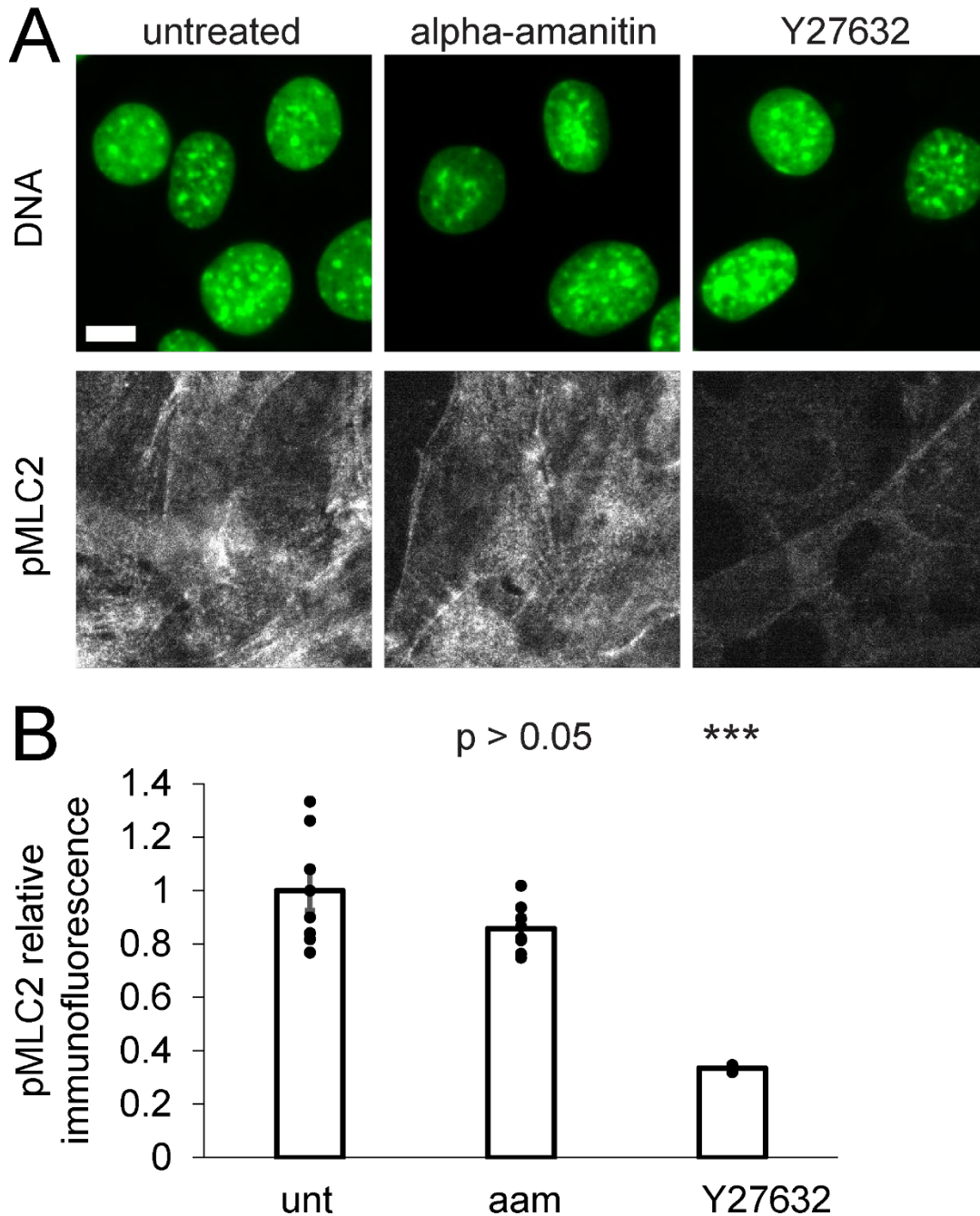


Fig. S2. Transcription inhibition does not alter active actomyosin contraction. (A) Example immunofluorescence images of DNA via Hoechst (green) and active myosin via phosphorylated myosin light chain 2 (pMLC2, gray) for untreated (unt), alpha-amanitin (aam), and actin contraction inhibition via ROCK inhibitor Y27632. (B) Relative pMLC2 immunofluorescence for each condition. Four to eight biological replicates for untreated (unt) and alpha-amanitin (aam) populations and four biological replicates for Y27632, consisting of 30 cells each, are shown as dots. Alpha-amanitin treatment was for 24 hrs. Error bars represent standard error and statistical tests are Student's t-tests, with significance denoted by * $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. Scale bar is 10 μm .

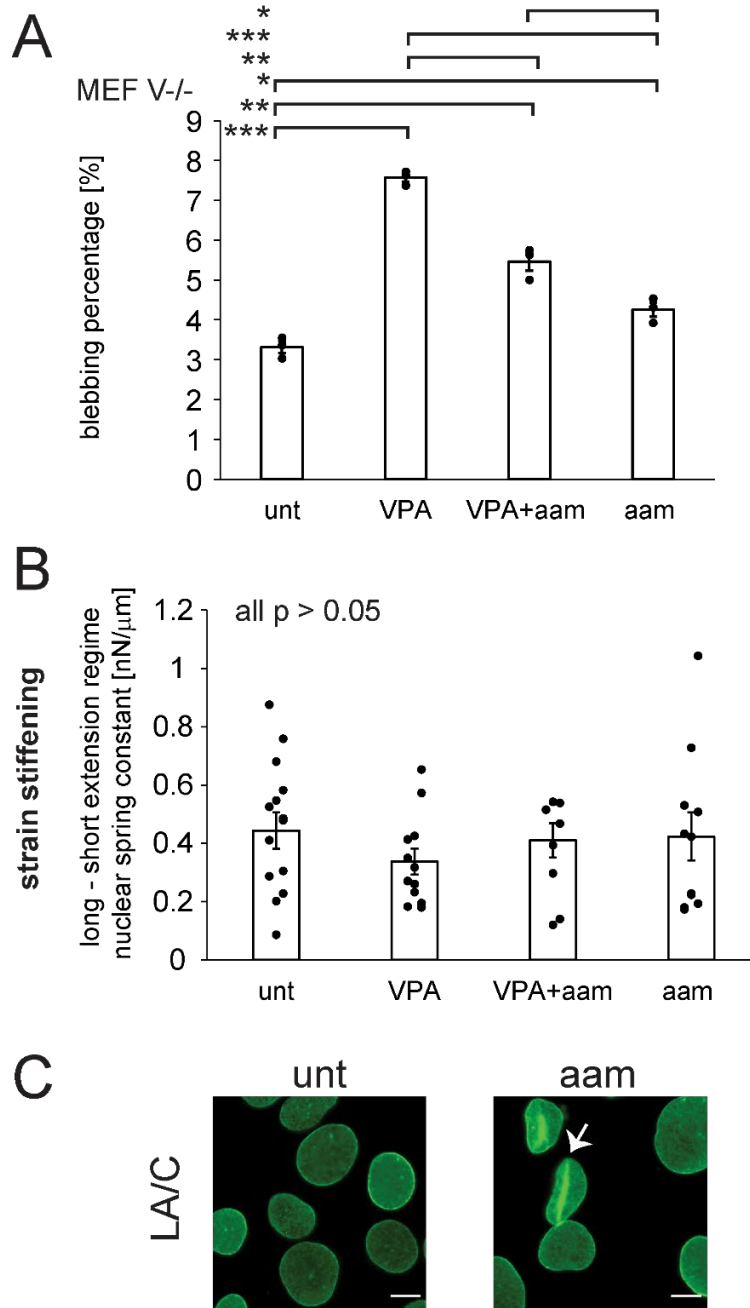


Fig. S3. Transcription inhibition does not alter the lamin-dominated nuclear rigidity regime. (A) Graph of nuclear blebbing percentages for untreated wild type (unt) and VPA-treated cells without or treated with alpha-amanitin (aam). Three biological replicates represented as dots consisted of > 200 cells each. (B) Graph of the lamin-A-based strain-stiffening nuclear spring constant (long regime minus short regime spring constant). unt, n = 12; VPA, n = 12; VPA+aam, n = 11; aam, n = 8. Error bars represent standard error and statistical tests are Student's t-tests, with significance denoted by * p < 0.05, ** p < 0.01, and *** p < 0.001. (C) Example images of lamin A/C immunofluorescence showing lamin wrinkles upon alpha-amanitin treatment, denoted by white arrow. Alpha-amanitin treatment was for 24 hrs. Scale bar is 10 μ m.

Table S1. Raw Data. This is an excel document with compiled data used for making each figure.

Available for download at

<https://journals.biologists.com/jcs/article-lookup/doi/10.1242/jcs.261547#supplementary-data>