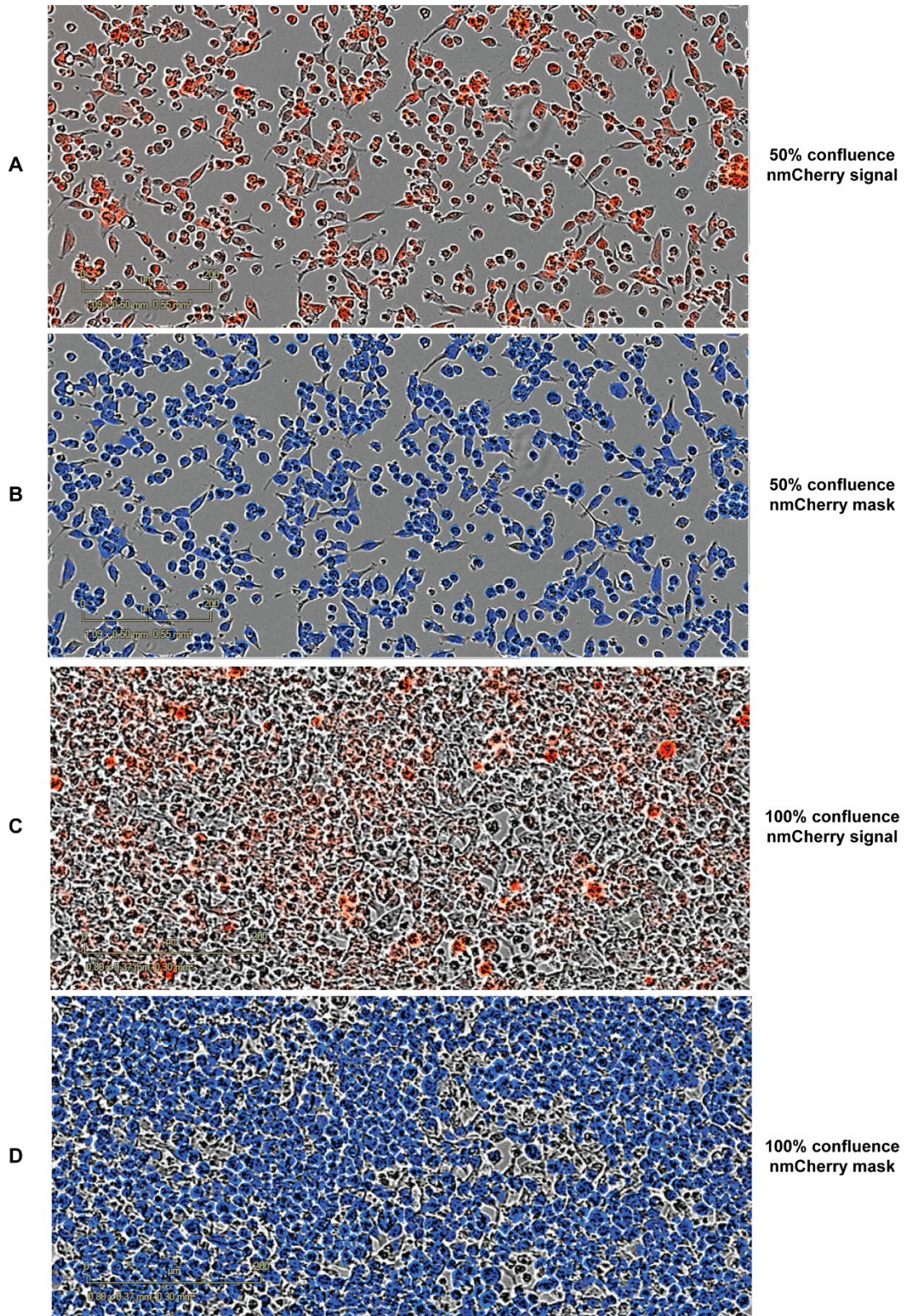
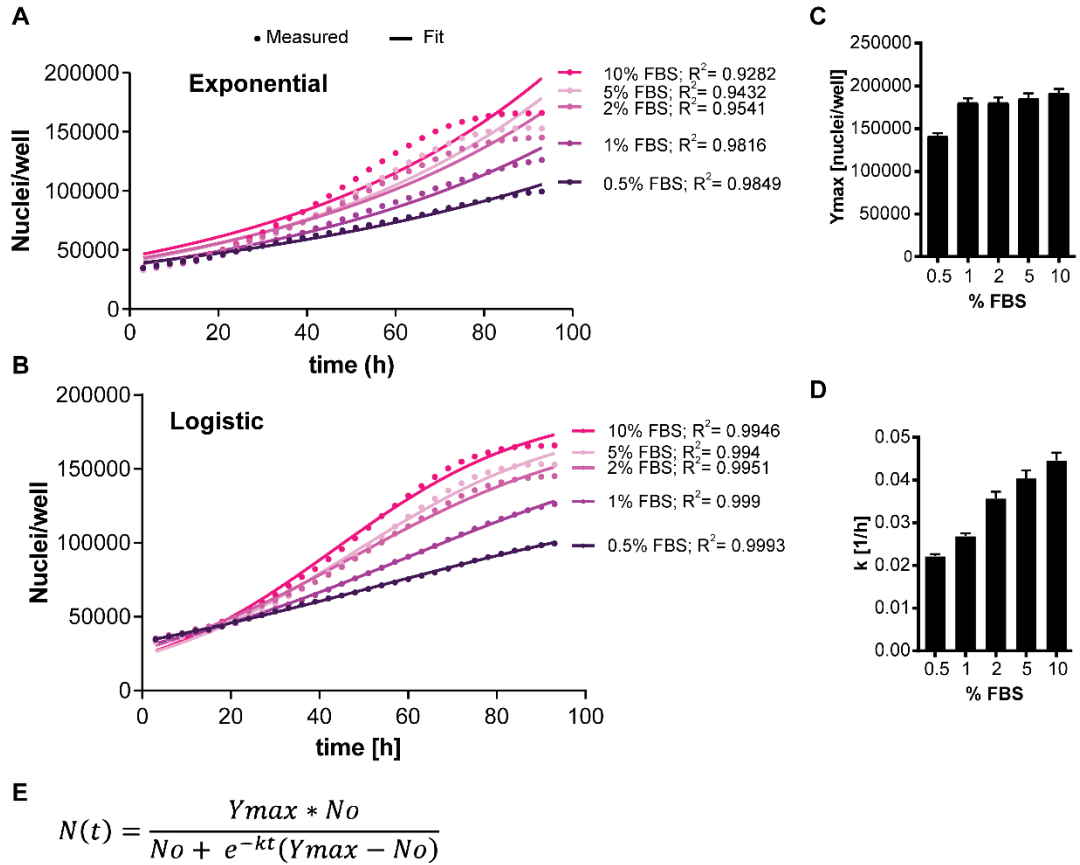


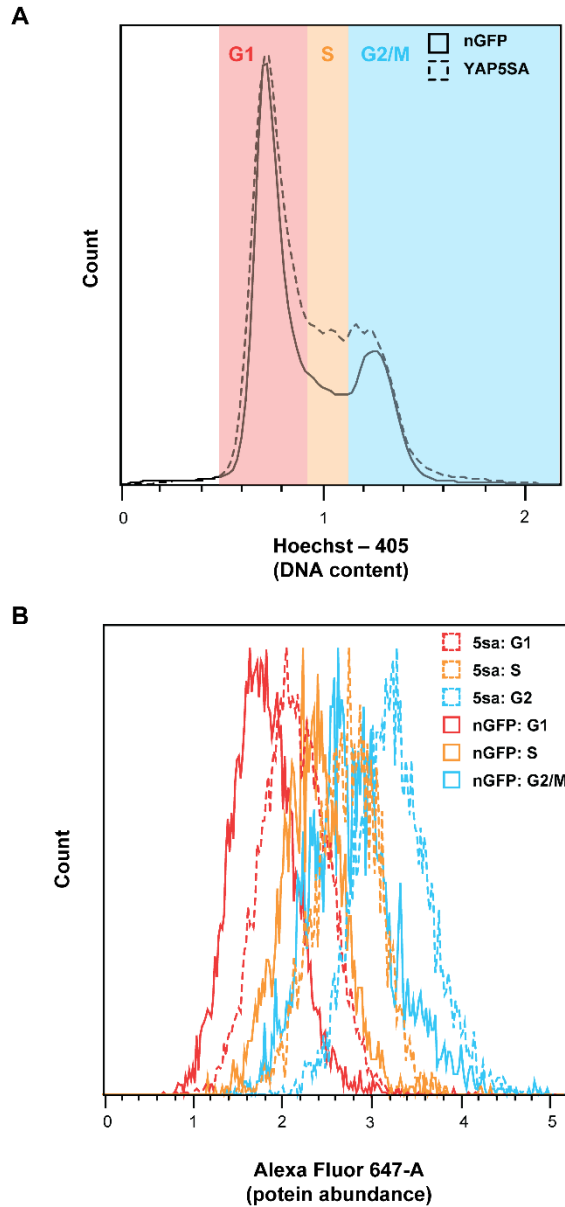
Supplementary Material:



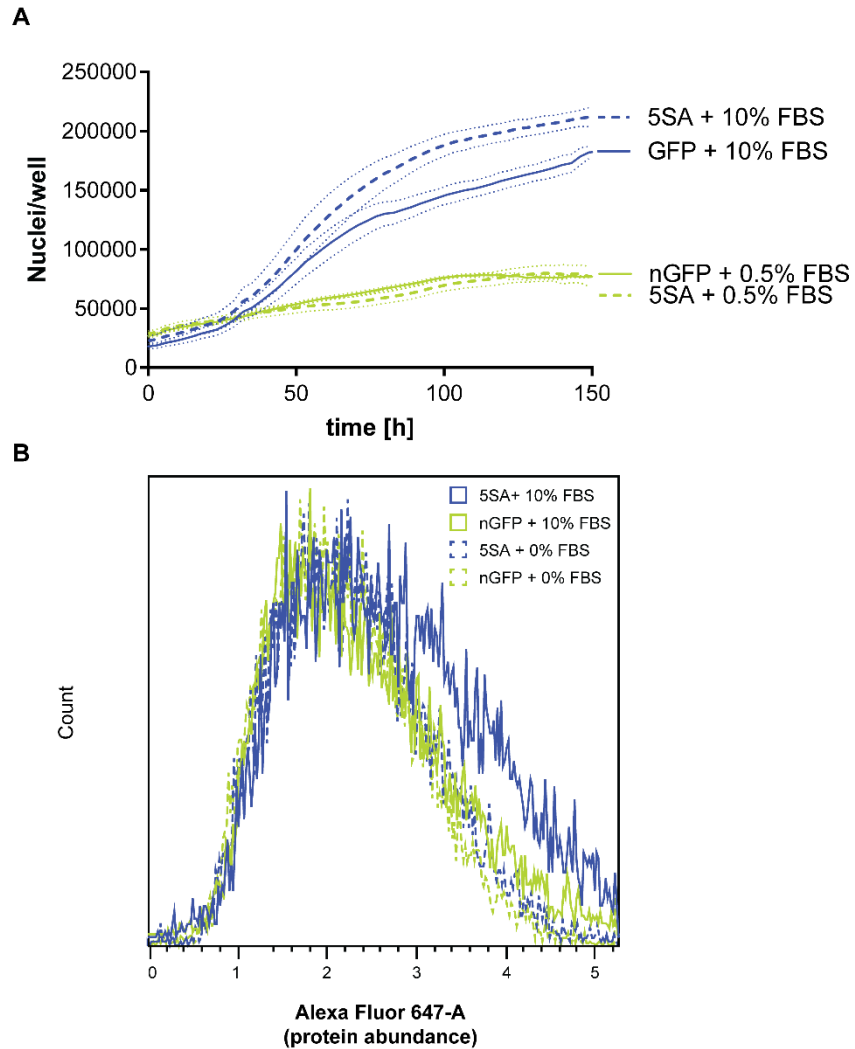
Supplementary Figure S2: Example of images acquired on and analyzed by the Incucyte ZOOM to obtain data about the number of nuclei and their average area. (A) HEK293 cells labelled with nmCherry growing at ~50% confluence. (B) The same field of view in A displaying the nmCherry mask used for estimating nuclear area and count as estimated by the Incucyte image analysis software. (C) Same as (A) at ~100% confluence. (D) Same as (B) at 100% confluence.



Supplementary Figure S3: Varying serum concentration alters the growth rate of HEK293 cells but not their carrying capacity in culture. The growth rate of HEK293 cells decreases over time, and is better modelled as logistic rather than exponential growth (A vs. B). The carrying capacity of a culture (Y_{max}) as estimated by the logistic growth equation does not increase by increasing bovine serum concentration (FBS) above 1 % (C) while the rate of growth (k) does (D). (E) Logistic growth equation. (n=5, mean±SEM)



Supplementary Figure S3: Cell cycle analysis and cell cycle dependent changes in protein content in YAP5SA vs nGFP controls. (A) The fraction of cells in S and G2/M is higher in YAP5SA-expressing cells (YAP5SA) vs controls expressing nuclear GFP (nGFP). (B) Total protein content is higher in YAP5SA-expressing cells (5SA) vs nuclear GFP (nGFP) controls throughout the cell cycle.



Supplementary Figure S4: Serum is required for the 5SA-dependent changes in proliferation and size. (A) Cell growth is reduced in the absence of serum, and is comparable between cells expressing nuclear GFP (nGFP) and YAP5SA (5SA) cells ($n=5$; $\text{mean} \pm \text{SEM}$). (B) Total protein content is higher in 5SA vs. nGFP controls in the presence of FBS, but not in its absence.

Supplementary Table S5: Table with protein and mRNA changes

Supplementary Table S6: Table with stiffness-dependent in gene expression after reanalysis of samples from GEO dataset GSE102350.