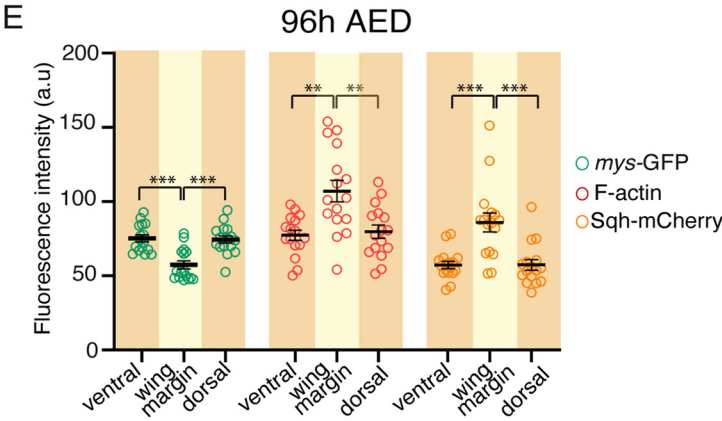
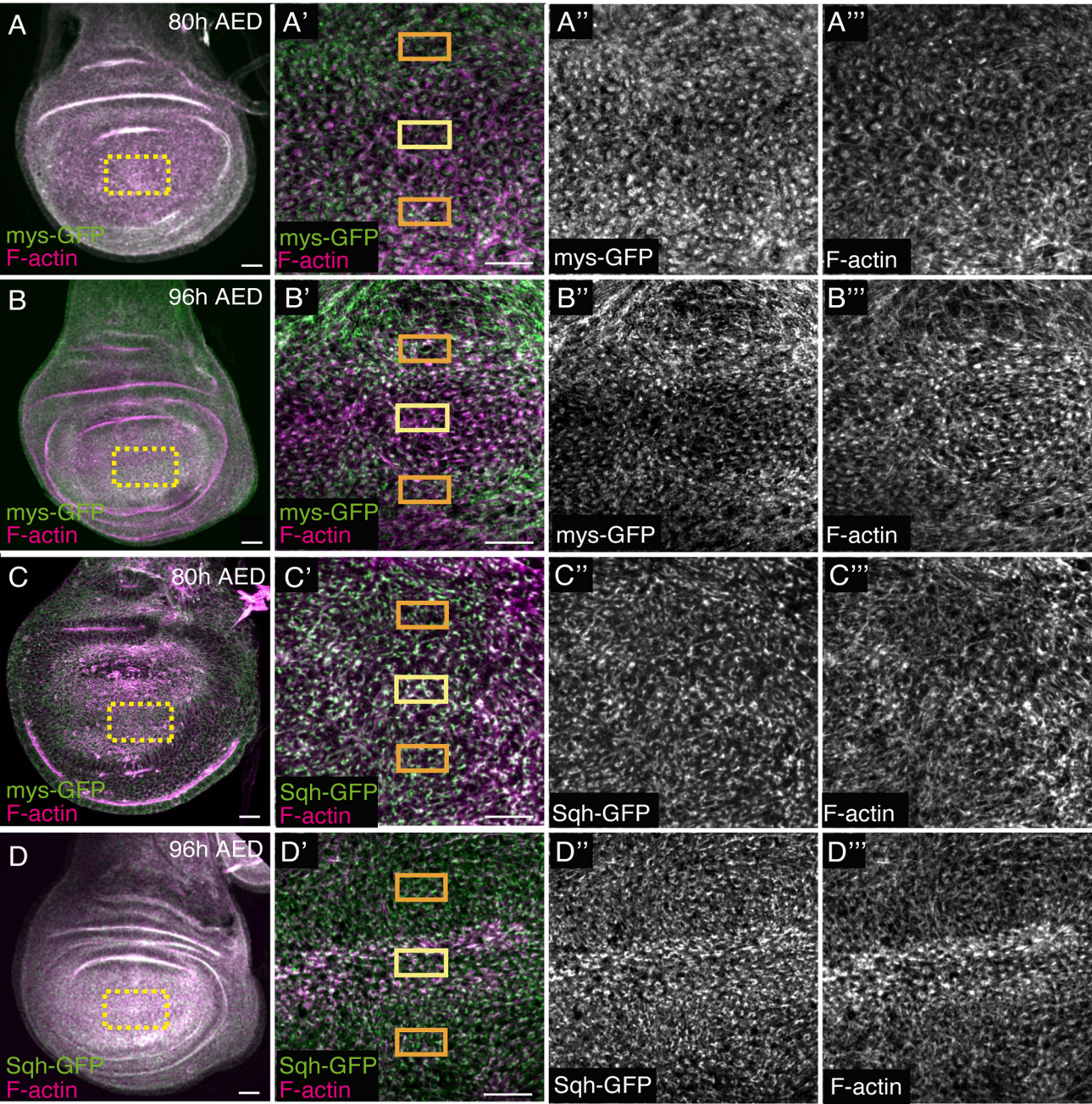


Expanded View Figures

Figure EV1. F-actin and Myosin organization changes throughout development in wing margin cells.

(A–D) Confocal views of third-instar wing discs stained with anti-mys-GFP (green in A–A', B–B', C–C', D–D' and white in A'', B'', C'', D'') and Rhodamine Phalloidin to detect F-actin (magenta in A–A', B–B', C–C', D–D' and white in A''', B''', C''', D'''). (A, B, C, D) Maximal projections of 80 h AED (A, C) and 96 h AED (B, D) wing discs. (A'–A''', B'–B''', C'–C''', D'–D''') High resolution images of YZ sections taken at the region in the dotted square in (A, B, C, D), respectively. (E) Quantification of *mys*-GFP, *sqh*-GFP and F-actin levels in mid L3 wing discs at the regions framed in (A', B', C', D'). Multiple Mann-Whitney U test from left to right: *** $p = 0.0002$, *** $p = 0.0002$, *** $p = 0.0016$, *** $p = 0.0049$, *** $p = 0.0003$, *** $p = 0.0007$. Error bars represent the mean $\pm$ SEM. Scale bar in all panels, 30 μ m. At least 15 wing discs were assessed over three independent experiments. Source data are available online for this figure.



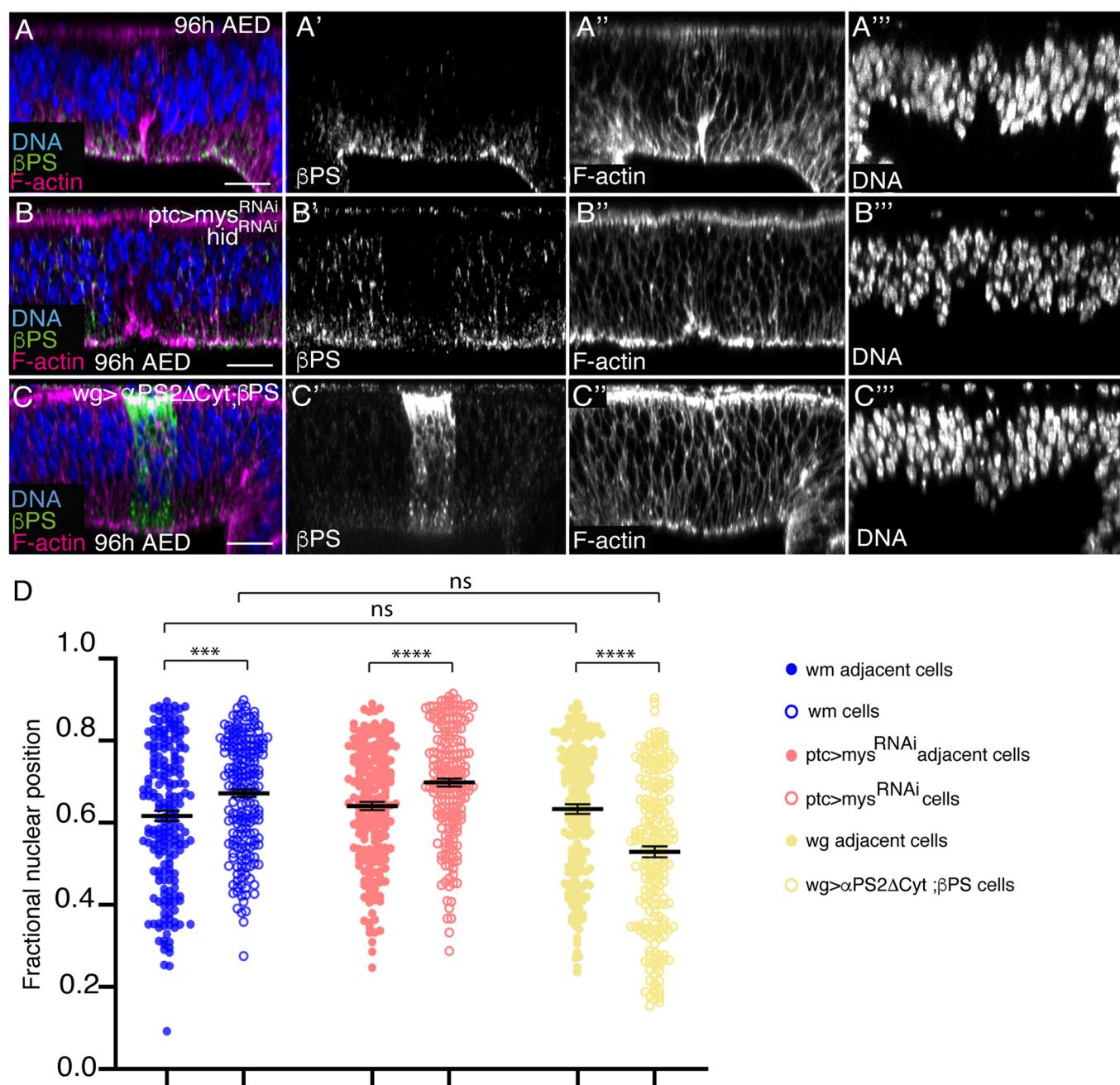


Figure EV2. Integrin levels condition nuclear positioning.

Confocal YZ (A-A'', C-C'') and XZ (B-B'') cross-sections of third-instar wing discs stained with anti- β PS (green in A, B, C and white in A', B', C'), Rhodamine Phalloidin to detect F-actin (magenta in A, B, C and white in A'', B'', C'') and the nuclear marker Hoechst (DNA, blue in A, B, C and white in A''', B''', C'''). (A) Control wing disc. (B) Wing disc co-expressing RNAis against *mys* and *hid* under the control of *ptcGal4*, *ptc>mys^{RNAi}*, *hid^{RNAi}*. (C) Wing disc co-expressing an active form of the α PS2 subunit and the β PS subunit under the control of *wgGal4*, *wg> α PS2 Δ Cyt; β PS*. (D) Quantification of the fractional nuclear position in wing margin and adjacent cells in control and experimental wing discs. Multiple Mann-Whitney U test from left to right: *** p = 0.000455, **** p = 1.62768E-05, **** p = 7.05405E-09, ns not significant. Error bars represent the mean $\pm$ SEM. Scale bar in all panels, 30 μ m. 200 nuclei were analyzed in at least 15 wing discs over three independent experiments. Source data are available online for this figure.

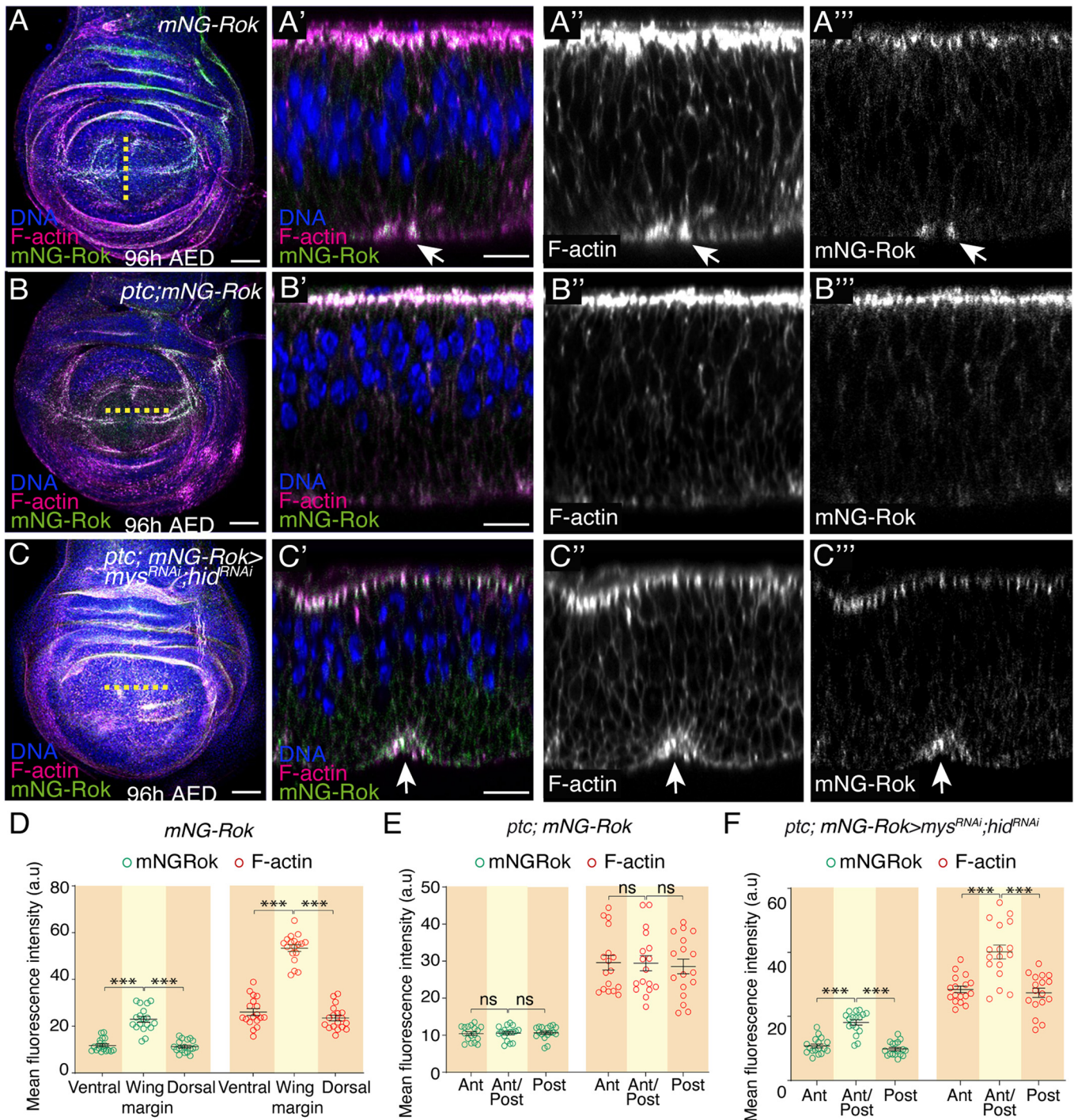


Figure EV3. Rok is found basally in wing cells with low integrin levels.

(A–C) Confocal views of third-instar wing discs of the indicated genotypes, stained with Rhodamine Phalloidin to detect F-actin (magenta A, A', B, B', C, C' and white in A'', B'', C'') and the nuclear marker Hoechst DNA (blue in A, A', B, B', C, C') and in white in A'', B'', C'' (A–C). Maximal projections of a third-instar wing imaginal discs of the indicated genotypes. Confocal YZ (A'–A'') and XZ (B'–B'', C'–C'') cross-sections along the yellow dotted lines shown in (A–C). (D–F) Quantification of *mNGROK* levels in controls and experimental wing discs along the white dotted lines in (A), (B) and (C). Multiple Mann-Whitney U test from left to right: (D) ****p* = 0.002, ****p* = 0.001, ****p* = 0.0006, ****p* = 0.00011, (E) ns not significant, (F) ****p* = 0.0013, ****p* = 0.00011, ****p* = 0.00074, ****p* = 0.00047. Error bars represent the mean ± SEM. Scale bar in all panels, 30 μm. At least 15 wing discs were assessed over three independent experiments. Source data are available online for this figure.

