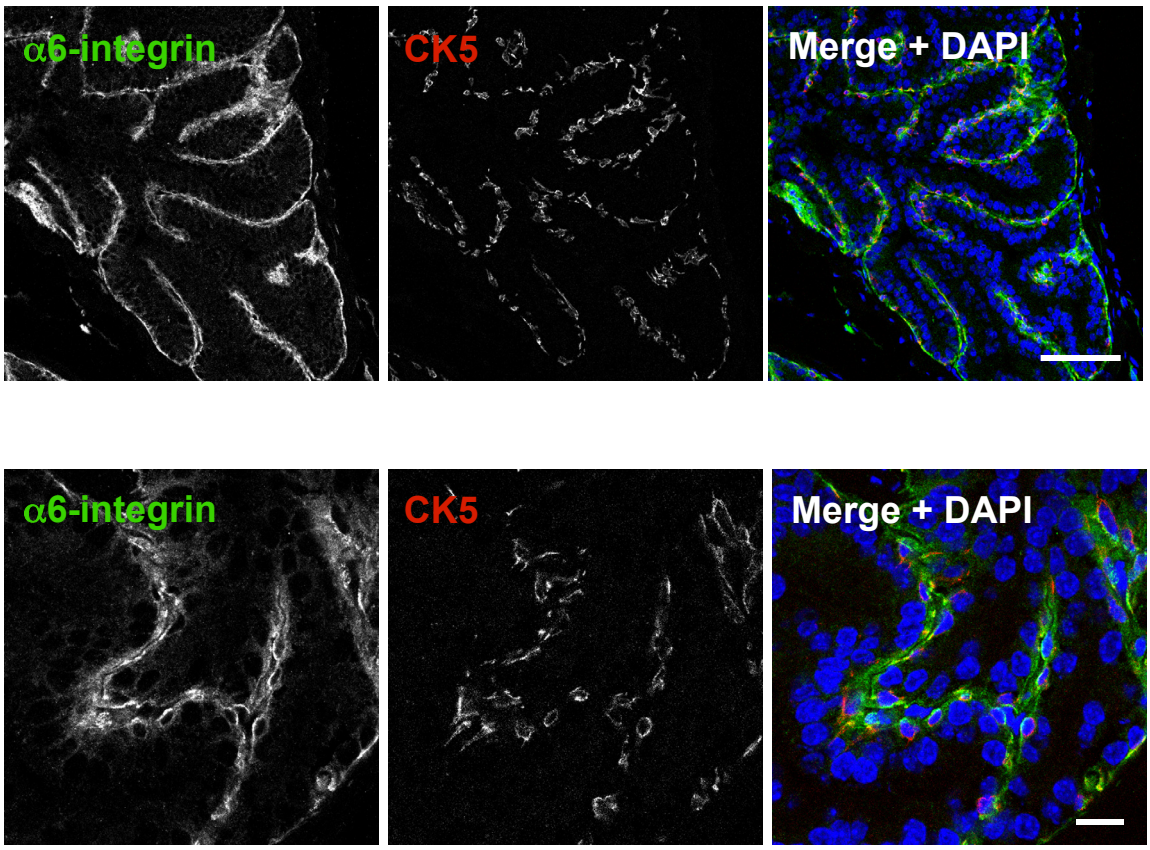
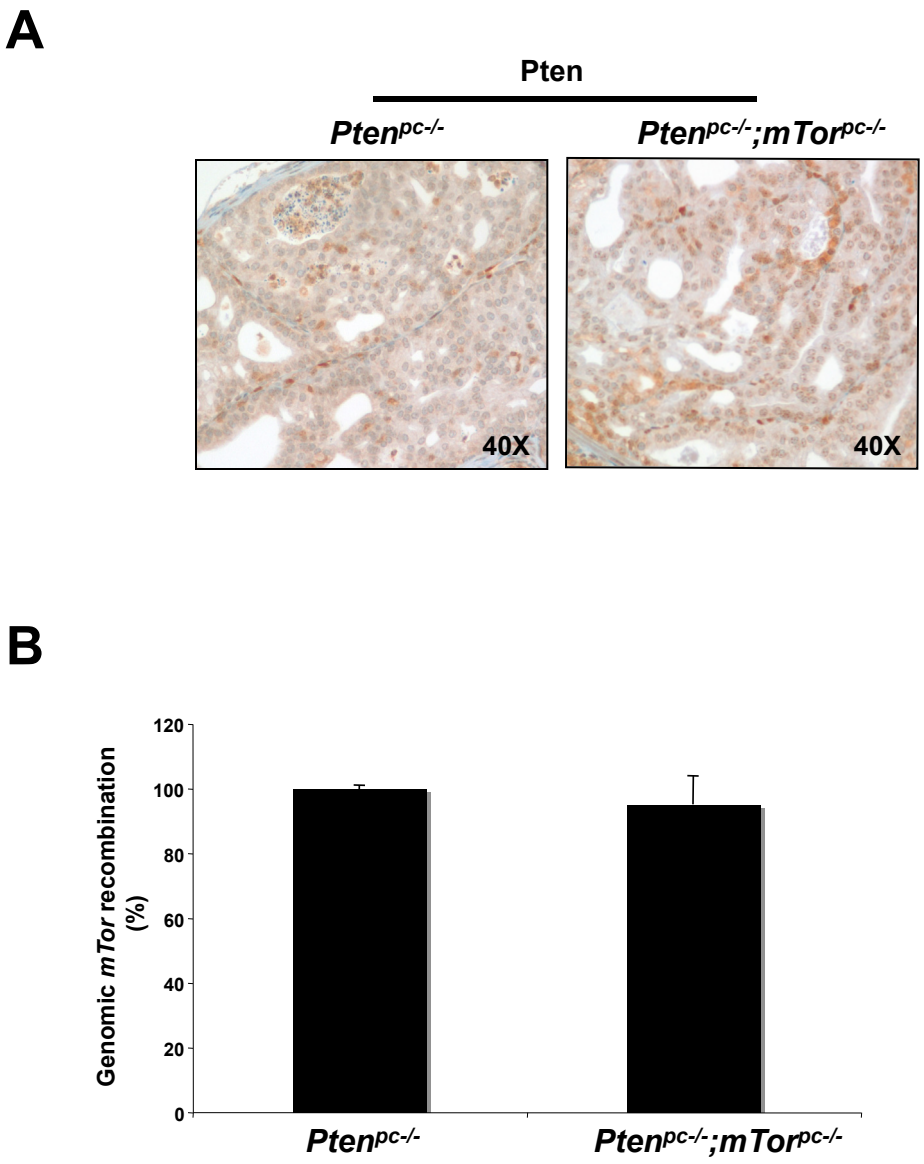
**Supplementary Materials and Methods**

**Immunofluorescence of frozen sections.** Paraformaldehyde-fixed frozen tissue sections from mouse prostate were allowed to dry for 20 minutes at room temperature. Sections were blocked with 10% goat serum plus 2% bovine serum albumin (BSA) for 1 hour then washed in PBS and treated using the avidin/biotin blocking kit (Vector labs) according to manufacturers instructions. Sections were then incubated with the following primary antibodies in 2% BSA overnight at 40 degrees: biotin conjugated anti-CD49f clone GoH3 (Biolegend) and anti-cytokeratin 5 rabbit polyclonal (Covance Research). After extensive washing, primary antibodies were detected using Streptavidin Alexa488 and anti-rabbit Alexa546 respectively (Invitrogen). Sections were washed again before mounting in Vectashield including DAPI (Vector labs). Slides were analyzed on a confocal microscope (Zeiss).

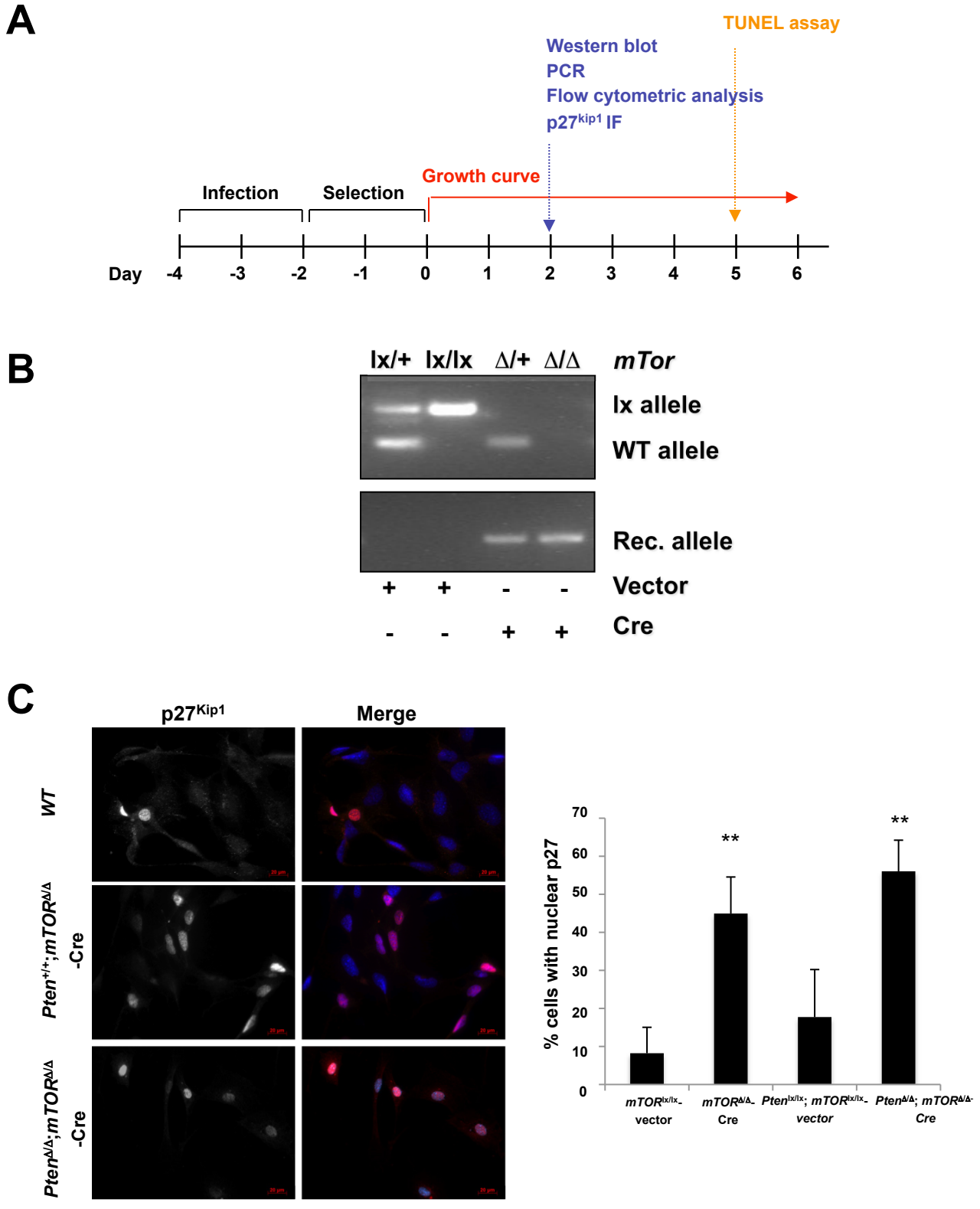
**p27$^{Kip1}$ immunofluorescence analysis in MEFs.** Cells were fixed in PFA 4% for 15 minutes and permeabilized in Triton X100 0.1%. p27 $^{Kip1}$ mouse monoclonal antibody (upstate, 1:200) was used.




**Supplementary Figure 1. α6-integrin is predominantly expressed by cytokeratin 5 (CK5)-positive basal prostatic epithelial cells.** Immunofluorescence images of WT AP sections co-stained for α6-integrin and CK5. DAPI nuclear counterstain is shown in blue. Scale bars are 100μm (top panels, lower magnification) and 20μm (lower panels, higher magnification).




**Supplementary Figure 2. Residual PIN-affected glands in *Pten*$^{pc-/-}$;*mTor*$^{pc-/-}$ mice arise from *Pten*-recombined cells that have escaped *mTor* recombination.**
(A) IHC staining of PIN lesions in the prostate of *Pten*$^{pc-/-}$ and *Pten*$^{pc-/-}$;*mTor*$^{pc-/-}$ mice with an antibody directed against Pten. (B) *mTor* genomic quatitative real-time PCR on DNA extracted from laser capture micro-dissected epithelial cells of PIN glands from cryo-sections of *Pten*$^{pc-/-}$ and *Pten*$^{pc-/-}$;*mTor*$^{pc-/-}$ mice prostates.




**Supplementary Figure 3. Deletion of *mTor* in MEFs.**
(A) Experimental timeline of infection and analysis of MEFs. (B) Identification of WT, $mTor^{loxP}$, and $mTor^{\Delta}$ alleles by PCR in $mTor^{loxP/loxP}$ and $mTor^{loxP/+}$ MEFs infected with PURO-IRES-GFP (vector) or Cre-PURO-IRES-GFP (Cre). (C) Left panel: p27 localization in the indicated MEFs by immunofluorescence analysis (IF) (see experimental timeline shown in 3A). Right panel: quantification of the percentage of cells with p27 nuclear localization. **, $p<0.01$.