

## Supplementary Fig. S7: Mechanisms for loss of ID1 repression in PDA

A) SMAD4-restored mouse PDA cells were treated with or without 2.5  $\mu$ M MK2206 and 100 pM TGF- $\beta$  for 12h and subjected to RNA-seq analysis. Each dot represents 1 transcript that is differentially expressed in the presence of TGF- $\beta$  +/- MK2206, n=2.

B) Conservation of accessible chromatin regions at the *ID1* locus in human and mouse PDA cells. *Top*, ATACseq tracks of Panc1 PDA cells, and of mouse SMAD4-restored *Kras*<sup>G12D</sup>;*Cdkn2a*<sup>-/-</sup>;*Smad4*<sup>-/-</sup> PDA cells. *Bottom*, sequence conservation of these regions. Each row represents 500 bp centered at a peak detected in Panc1 cells. Coordinates were converted from hg19 to mm10 using LiftOver.

C) *Kras<sup>G12D</sup>;Cdkn2a<sup>-/-</sup>;Smad4<sup>-/-</sup>* and *Kras<sup>G12D</sup>;Cdkn2a<sup>-/-</sup>* autochthonous mouse PDAs were subjected to FOXO1 IHC. A *Kras<sup>G12D</sup>;Cdkn2a<sup>-/-</sup>* autochthonous mouse PDA treated with 100 mg/kg MK2206 was used as a control for inhibition of AKT signaling and shows strong nuclear FOXO1 staining.

D)  $Kras^{G12D}$ ; Cdkn2a<sup>-/-</sup> pancreatic organoids were treated with 2.5  $\mu$ M MK2206, 2.5  $\mu$ M SB505124, and/or 100 pM TGF- $\beta$  as indicated. Images of the organoids after 5 days of treatment.