

## SUPPLEMENTAL FIGURE LEGENDS

**Figure S1:** *Dual immunofluorescence of amylase and K19 showing co-expression in (A,B) metaplastic  $Mist1^{Kras/+}$  (2 month) and (C-E)  $Mist1^{Kras/LacZ}$  (PN1) acinar cells (A-B, x1000; C-E - x400).*

**Figure S2:** *Insulin Immunohistochemistry reveals comparable number of insulin-expressing  $\beta$  cells in PN1  $Mist1^{Kras/LacZ}$  pancreata compared to the  $Mist1^{LacZ/+}$  and  $Mist1^{Kras/+}$  mice (x200). Arrows indicate islets.*

**Figure S3:** *Comparison of the amylase and K19 expression patterns in 6 week  $Mist1^{+/+}/LSL-Kras^{G12D/+}/ptf1a^{+/+}$ ,  $Mist1^{+/+}/LSL-Kras^{G12D/+}/ptf1a^{Cre/+}$ ,  $Mist1^{LacZ/LacZ}/LSL-Kras^{G12D/+}/ptf1a^{+/+}$ , and  $Mist1^{LacZ/LacZ}/LSL-Kras^{G12D/+}/ptf1a^{Cre/+}$  pancreata by QRT-PCR. Expression of the ductal marker K19 shows an 80-fold increase in the  $Mist1^{LacZ/LacZ}/LSL-Kras^{G12D/+}/ptf1a^{Cre/+}$  samples while these pancreata exhibit extremely low levels of acinar cell products.*

**Figure S4:** *Human  $Mist1$  expression is lost in acinar-ductal metaplastic and PanIN lesions. Human pancreas sections from normal (a) and PDA (b-d) patients stained with anti- $Mist1$ . Normal acinar cells are  $Mist1$  positive whereas ducts and islets remain  $Mist1$  negative. Note that in areas of acinar-ductal (ac-du) metaplasia individual lesions contain both  $Mist1$  positive (black arrows) and  $Mist1$  negative (red arrows) cells. Early PanINs (asterisks) are also  $Mist1$  negative as are areas containing carcinoma cells. Similar results have been reported by Zhu et al. <sup>1</sup>.*

**Figure S5:** *Hes1* expression is observed in *Mist1*<sup>LacZ/LacZ</sup> acinar cells. Hes1 IHC on pancreas sections from 2-month *Mist1*<sup>LacZ/+</sup> and *Mist1*<sup>LacZ/LacZ</sup> animals. **(a, c)** Only centroacinar cells express Hes1 (red arrows) in the *Mist1*<sup>LacZ/+</sup> pancreas while acinar cells remain Hes1 negative (black arrows). **(b, d)** Acinar cells with strong (red arrows) and weak (white open arrows) Hes1 expression are observed in the *Mist1*<sup>LacZ/LacZ</sup> pancreas. A Hes1+ centroacinar cell is also seen in (d) (black arrow). a-b, x200; c-d, x600.

## REFERENCES

1. Zhu L, Shi G, Schmidt CM, Hruban RH, Konieczny SF. Acinar cells contribute to the molecular heterogeneity of pancreatic intraepithelial neoplasia. *Am J Pathol* 2007;171:263-73.