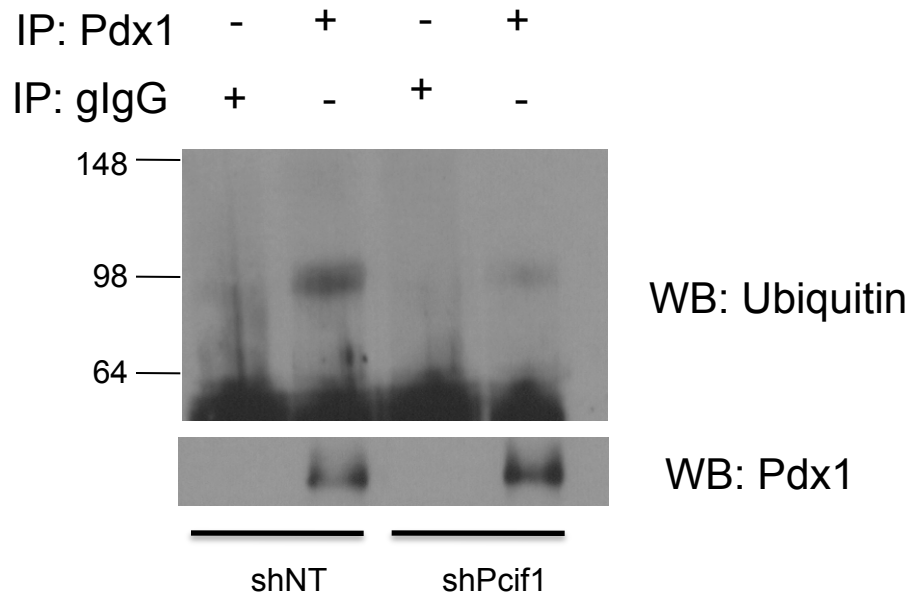
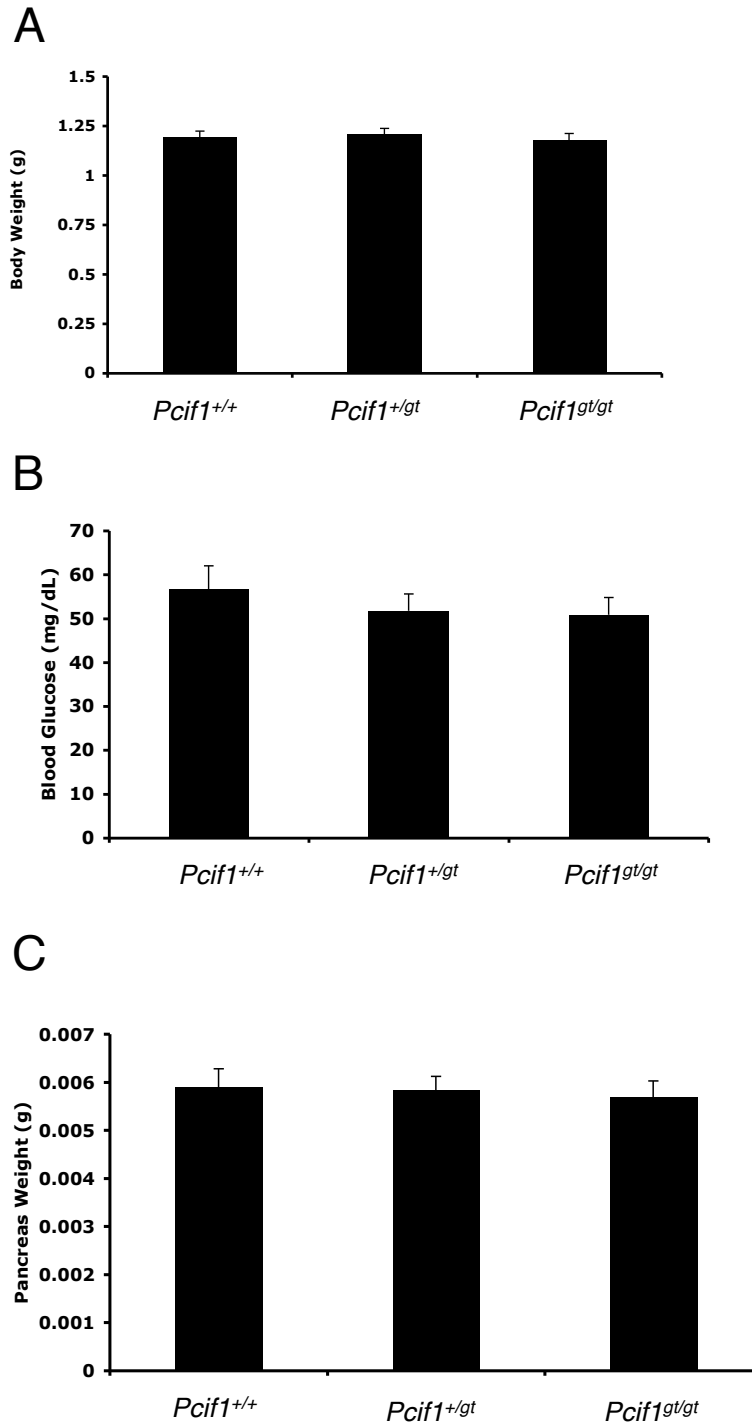


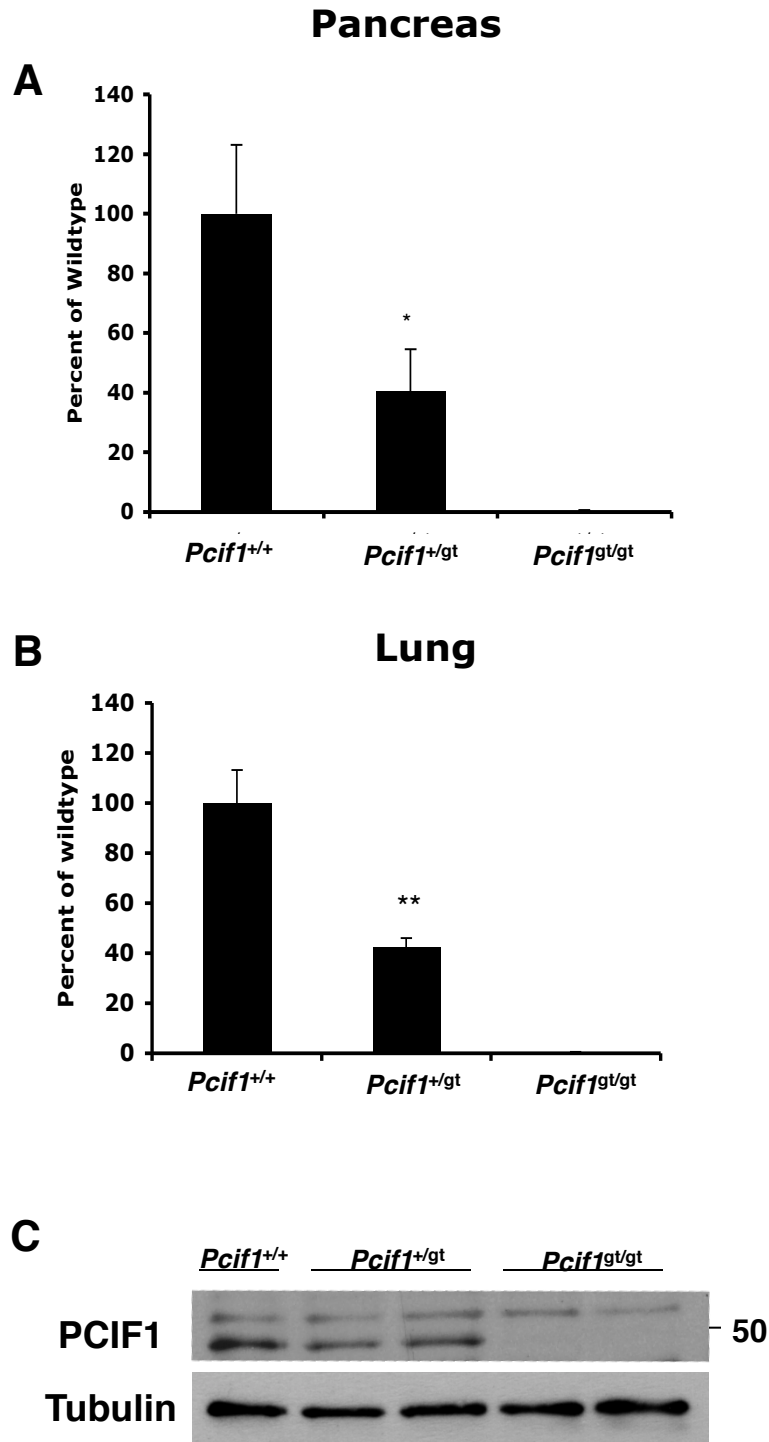
Supplemental Figure 1. Input western blots of *in vivo* ubiquitination assays (A) Corresponds to Figure 1B (B) Corresponds to Figure 1C. (C) Corresponds to Figure 1D.



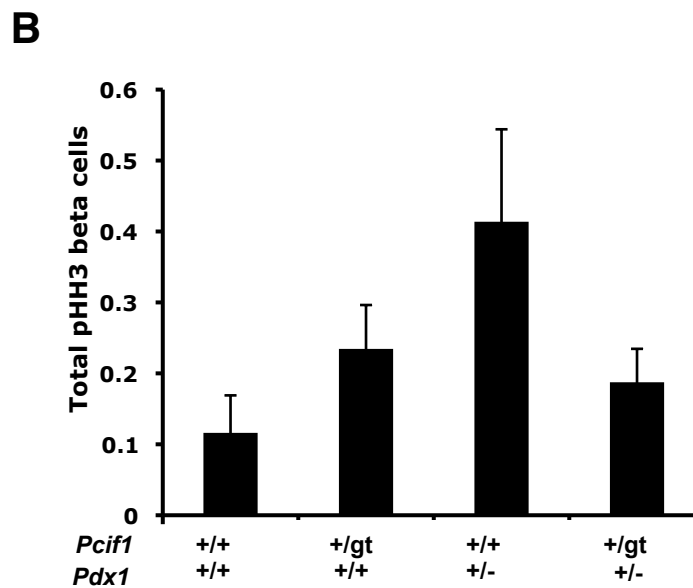
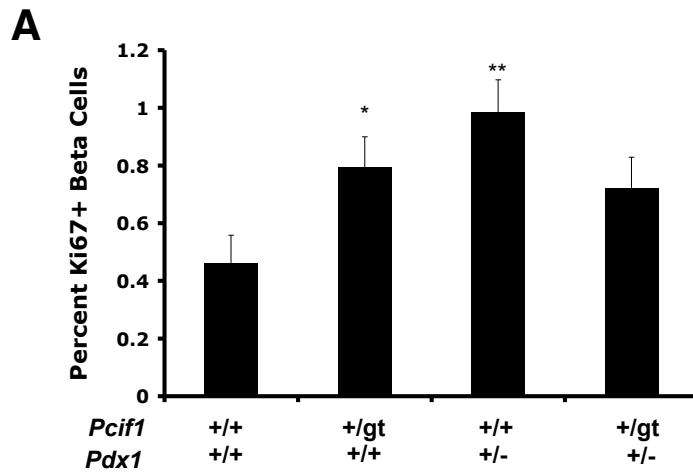
Supplemental Figure 2. Analysis Pdx1 ubiquitination in Min6 cells. Min6 cells were nucleofected with plasmids expressing an shRNA targeting Pcf1 or a non-targeting control. After 24 hour culture in 2mM glucose, and 8 hour exposure to LLnL, lysates were subjected to immunoprecipitation with anti-Pdx1 antibody or matching IgG. Western blot is probed for ubiquitin (upper panel) or Pdx1 (lower panel)



Supplemental Figure 3. Analysis of e18.5 *Pcif1^{gt}* embryos. (A) Body weight. (B) Blood glucose (C) Pancreas wet weight. (n=21-33 per group)

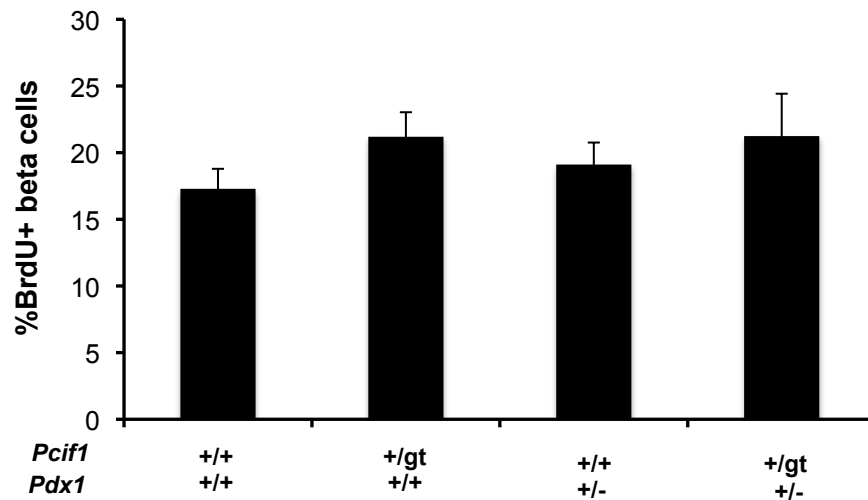


Supplemental Figure 4. *Pcif1*^{gt} disrupts *Pcif1* expression. (A, B) *Pcif1* transcript measured by quantitative PCR in e18.5 pancreas (A) and lung (B), normalized to HPRT, n=5-6 for pancreas, 10-16 for lung. *Pcif1* transcript was undetectable in all *Pcif1*^{gt/gt} samples. * p<0.05, **p<0.01 compared to +/+ littermates. (C) Western blot analysis of e18.5 kidney lysate. Blots probed for *Pcif1* and tubulin.



Supplemental Figure 5. *Pcif1* deficiency increases beta cell replication

(A) Beta cell replication quantified as percentage of Ki67 positive beta cells. n=5-8/group, an average of 2,381 cells counted per animal. *p<0.05, **p<0.01 compared to wildtype. (B) Beta cell replication quantified as percentage of phospho-histone H3 positive beta cells. n=5-8 per group, an average of 2,715 cells counted per animal.



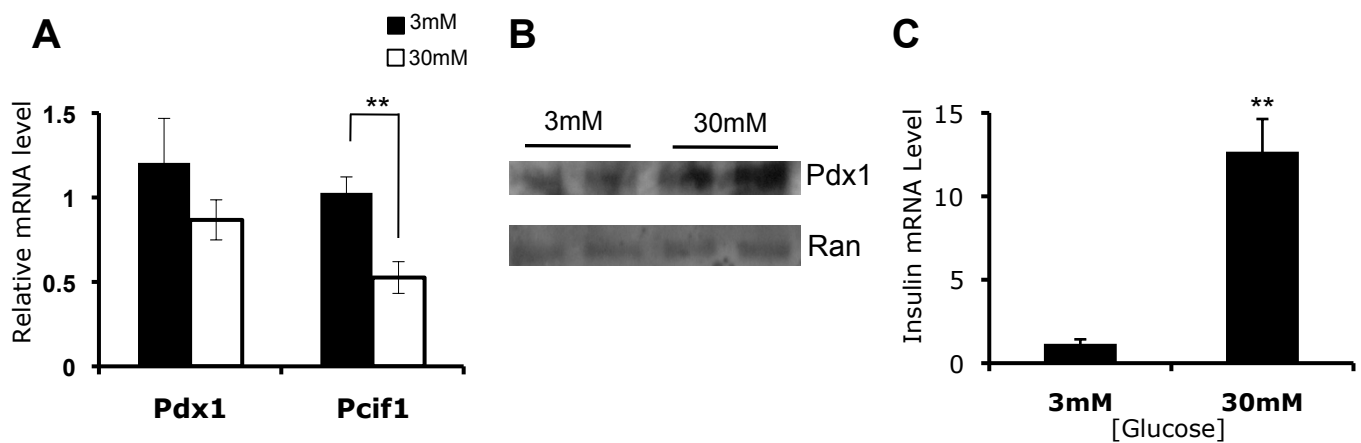
Supplemental Figure 6. Effect of *Pcif1* on beta cell replication is age dependent

(A) Beta cell replication quantified as percentage of BrdU positive beta cells. 5 week old mice harvested after one week of BrdU administration. n=6-11/group, an average of 1,119 cells counted per animal.



Supplemental Figure 7. Pcif1 expression in Min6 cells

Pcif1 mRNA level in Min6 cells maintained in low (5.5mM) or high (25mM) glucose, normalized to HPRT. n=6 per group



Supplemental Figure 8. Glucose regulation of Pcf1 in mouse islets

(A) QPCR measurement of Pcf1 and Pdx1 mRNA from islets cultured overnight in 3mM or 30mM glucose (n=6-7 per condition, **p<0.01). (B) Western blot of lysates from islets cultured overnight in 3 or 30mM glucose, blot is probed for Pdx1 and Ran (loading control). (C) QPCR measurement of insulin mRNA from islets cultured overnight (n=6-7 per condition, **p<0.01).