Supporting Information

Liu et al. 10.1073/pnas.1007001107

SI Materials and Methods

Antisera. Anti-Meis1, -Meis2, and-Flag (M2) were from Sigma. Anti-RNA polymerase II was obtained from Abcam.

q-PCR Primers. Ndfip1-F: 5-TTCGGAAGATGCCAGAAACT-3
R: 5-GAAGCCTTTGCCAGAAAACA-3
Bnip3-F: 5-AAAGGGGGAATTTTCTCAGC-3
R: 5-TCCAATGTAGATCCCCAAGC-3
Ccng1-F: 5-CGGTCCCTCAAGTCTTTCTG-3
R: 5-GCAAGGTGCTGAGGTTTCTC-3

Proximal Pdpk1 promoter (for RNA polymerase II ChIP):

F: 5-AACCCGGAA ATACGGCTCT-3
R: 5-TCTCGCCCATTGGTCAGTAT-3

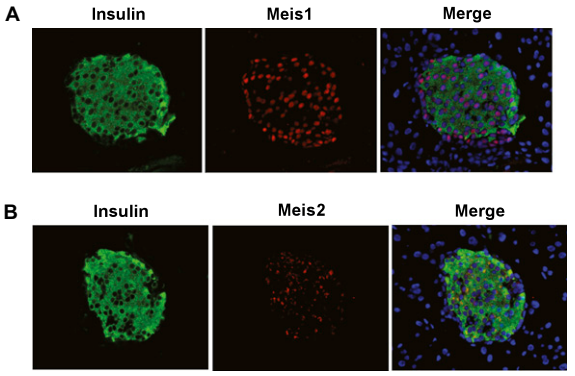

Fig. S1. Expression of Meis1 and Meis2 in adult pancreas islets. Representative image of adult mouse pancreatic islets following immunofluorescence for insulin (green), Meis1 (red in *A*) or Meis2 (red in *B*). (*A* and *B*, *Right*) Merged image of insulin, Meis, and DAPI (blue).

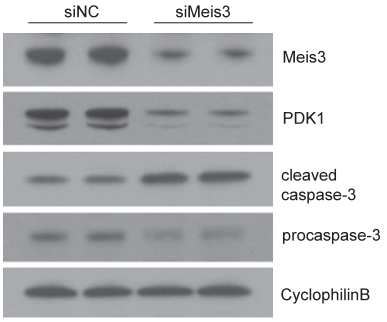

Fig. S2. Meis3 regulation of PDK1 and cell survival in β-HC9 cells. Representative Western blot analysis of PDK1 and cleaved caspase-3 protein levels in siRNA-transfected β-HC9 cells, performed in duplicate.

A

siMeis3 vs siControl	
Gene name	FC
Ndfip1	-3.6
Bnip3	-2.7
Ccng1	-2.6

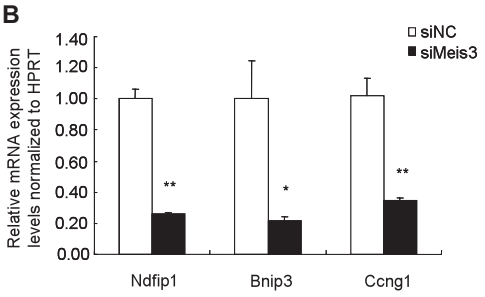

Fig. S3. Other differentially Meis3-regulated genes with potential roles in cell survival. Down-regulation of Ndfip1, Bnip3, and CyclinG1 in Meis3-deficient Min6 cells observed by Agilent microarray analysis (*A*) and confirmed by quantitative RT-PCR (*B*) ($n = 4$; $*P < 0.05$, $**P < 0.01$).

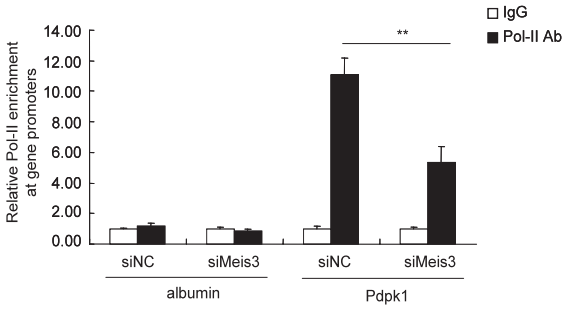

Fig. S4. Effect of Meis3 on the RNA polymerase II recruitment at Pdpk1 promoter. RNA polymerase II occupancy at Pdpk1 promoter was assessed by chromatin immunoprecipitation (ChIP) following the 72 h transfection with Meis3-targeted siRNA in Min6 cells. DNA enrichments are presented as fold change compared with control IgG binding. Four independent ChIP experiments were performed for both Meis3 antiserum and IgG, $^{**}P < 0.01$.

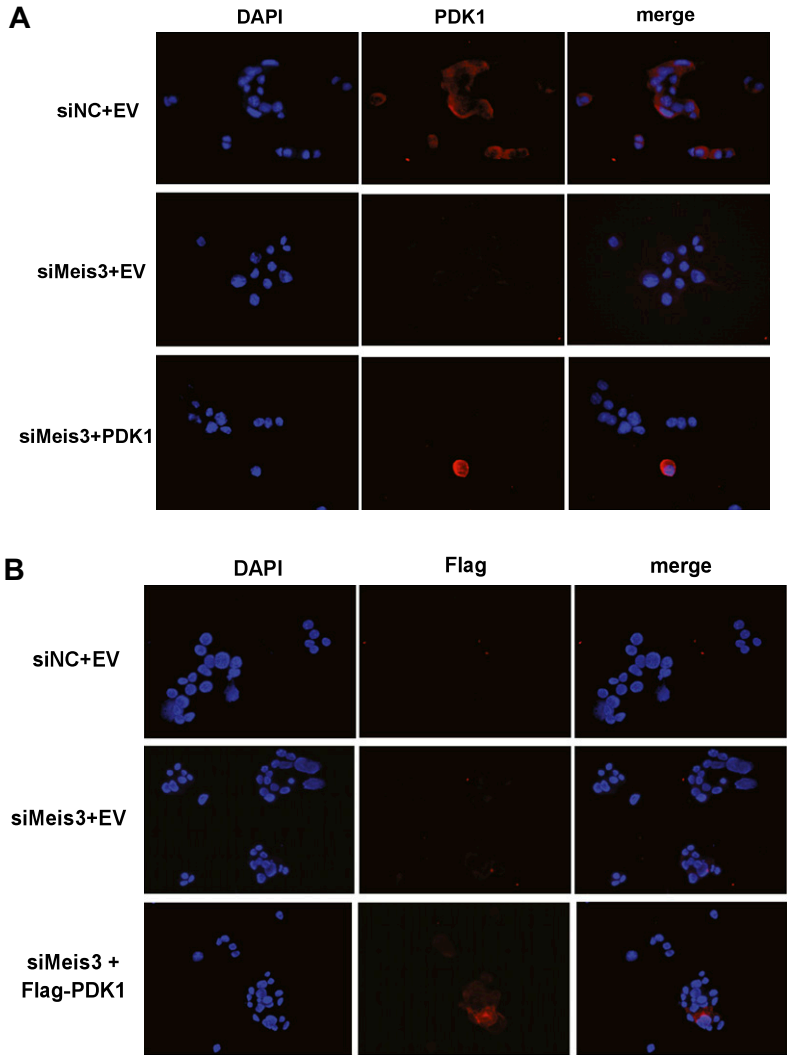

Fig. S5. Immunostaining for the overexpressed PDK1 in Min6 cells. Min6 cells were conucleofected (Amaxa Biosystems) with 1 nmol of siRNA and 600 ng of empty vector or PDK1 expression plasmid. Transfected Min6 cells were plated in the glass chamber slides followed by immunofluorescence staining for PDK1 (*A*) or Flag (*B*), respectively. Nuclei were counterstained with DAPI.

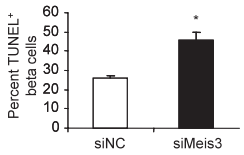

Fig. S6. Quantification of TUNEL staining in isolated primary islets. Insulin-positive nuclei and TUNEL-positive cells were counted by iVision software (BioVision Technologies) using the counting tool. Percent TUNEL-positive cells were quantified in 300 insulin-positive nuclei per group ($n = 3$, $^{*}P < 0.01$ relative to siNC control).

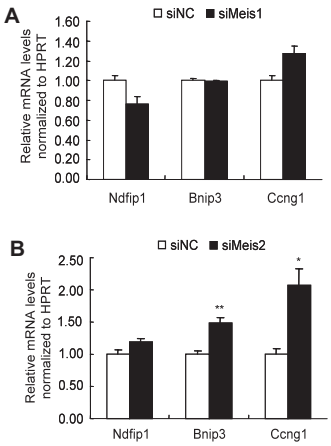

Fig. S7. The expression levels of Ndfip1, Bnip3, and CyclinG1 in Meis1- or Meis2-deficient Min6 cells. RT-QPCR analysis of relative mRNA levels of indicated genes in siRNA-transfected cells. $n = 3$, $^{*}P < 0.05$, $^{**}P < 0.01$ compared with values of the mRNA levels in nontargeted control siRNA (siNC)-transfected cells.