



**ESM Fig. 1** Identification of putative enhancers in islets. **(a)** To identify enhancer regions in pancreatic islets we identified positioned nucleosomes from in vivo islet H3K4me1 enrichment data and combined these locations with loci bound in vivo by PDX1, MAFA, NEUROD1 or FOXA2. Loci identified within promoters or with inappropriately spaced flanking nucleosomes were removed from consideration as indicated. **(b)** Heatmaps of H3K4me1 read density, nucleosome positions and PDX1, MAFA, NEUROD1 or FOXA2 enrichment in  $\pm 1$  kb regions around enhancer midpoints. The loci are organized by the number of occupying transcription factors (indicated on the right), then ordered by enhancer width