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Electronic supplementary material

Below is the link to the electronic supplementary material.

ESM Table 1 Sequence of primers for quantitative RT-PCR (PDF 28 kb)

ESM Fig. 1 Transcription factor *Mafb* (black circle) and catalase (white circle) follow different patterns of expression in the postnatal period. Quantitative RT-PCR data expressed with respect to adult using S25 as internal control gene. Mean ± SEM, n = 4–6 isolated islet samples per age, each pooled from three to ten animals. The same samples were analysed in Fig. 1a,b and ESM Fig. 1 (PDF 174 kb)

ESM Fig. 2 Examples of the immunofluorescent images of MAFA levels used to quantitate the changes in nuclear staining during the postnatal period. The quantification on the intensity of MAFA nuclear staining shown in Fig. 2 was done on images such as these. While insulin was stained to indicate the beta cells, the green channel has been deleted here in order to more clearly visualise the variable MAFA (red) staining. The outline of the insulin staining is indicated by the white lines. DAPI indicates the nuclei (PDF 80 kb)

ESM Fig. 3 Islets from the same section of pancreas at P7 show varying levels of MAFA protein. At these early ages there is heterogeneity of nuclear and cytoplasmic MAFA protein (red) in islets stained for insulin cells (green) (PDF 1.27 mb)

ESM Fig. 4 Postnatal levels of MAFA protein (green) in mouse islets delineated by glucagon staining (red). MAFA staining increased with postnatal age in mice. At P0 and P1 mouse beta cells expressed some cytoplasmic MAFA and increased nuclear MAFA levels at P7 and P15 (PDF 46 kb)

ESM Fig. 5 Adenoviral-mediated expression of *MAFA* increases MAFA protein intensity. **a** After 72 h culture, Ad-*MAFA* infection (green as detected by GFP epifluorescence) of partially dispersed P2 islets resulted in enhanced intensity and nuclear localisation of MAFA (red) in insulin-positive (blue) cells compared with Ad-*Gfp* infected cells. **b** HSV-tag staining (red) confirms the presence of exogenous MAFA in the nuclei of $GFP^{\pm}$ (green) $insulin^{\pm}$ (blue) cells from Ad-*MAFA* infected cultured P2 islet cells. Endogenous MAFA is not detected because the antibody is against the HSV tag and not MAFA per se. Scale bar,10 μm (PDF 1.46 mb)

ESM Fig. 6 Haemolytic plaques around insulin-secreting beta cells. Plaque area is proportional to the amount of insulin secreted by individual beta cells [26]. Cells can be categorised by the immunoplaque area as seen in the characteristic subpopulations observed in adult beta cells (Fig. 7c) as non-secreting cells (NS), small plaque-forming (SP) cells (<4,000 μm^2), medium plaque-cells (MP) (>4,000 μm^2 and <6,000 μm^2) or large plaque-forming (LP) cells (>6,000 μm^2). Scale bar, 100 μm (PDF 105 kb)