

SUPPLEMENTARY INFORMATION

A rationally designed Hsp70 variant rescues the aggregation-associated toxicity of human IAPP in cultured pancreatic islet β -cells

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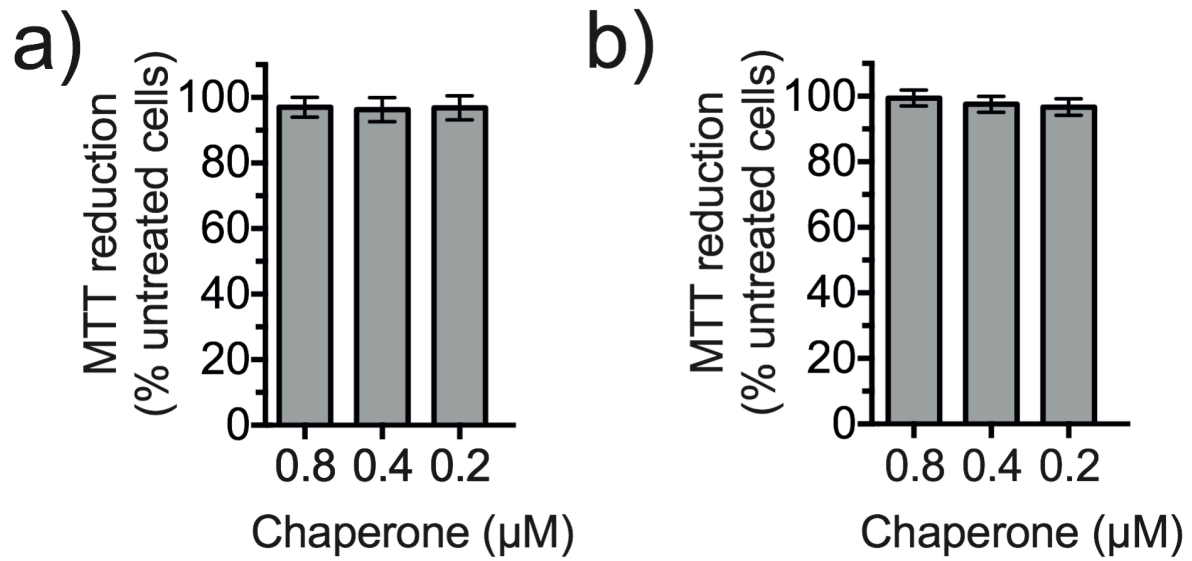


Figure S1. Viability of RIN-m5F cells in the presence of increasing concentrations of Hsp70 variants, but not of hIAPP, using the MTT reduction assay. Cells were incubated for 24 h with: **(a)** Hsp70 WT or **(b)** GHsp70-hIAPP at the molar concentrations used in **Figure 2a**. Data are the mean \pm SEM ($n = 5$) and are representative of two different experiments conducted on separate days. Cells lysed with Triton X-100 were used as a negative control to assess the minimum MTT reduction ($\sim 2 \pm 0.5$ % of untreated cells).

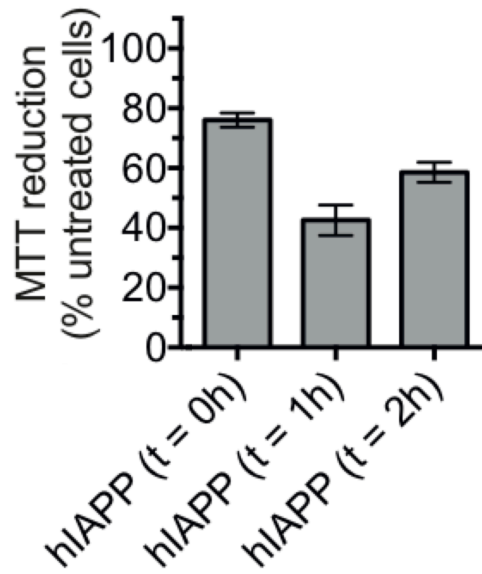


Figure S2. Toxicity of hIAPP on RIN-m5F cells using the MTT reduction assay. Cells were incubated for 24 h with hIAPP suspended at 10 μ M in cell media. The media was added to the cells immediately ($t = 0$ h) or after pre-incubation at 37 $^{\circ}$ C at quiescent conditions for 1 hour ($t = 1$ h) or 2 hours ($t = 2$ h). Data are the mean \pm SEM ($n = 5$) and are representative of two different experiments conducted on separate days. Cells lysed with Triton X-100 were used as a negative control to assess the minimum MTT reduction ($\sim 3 \pm 0.5$ % of untreated cells).

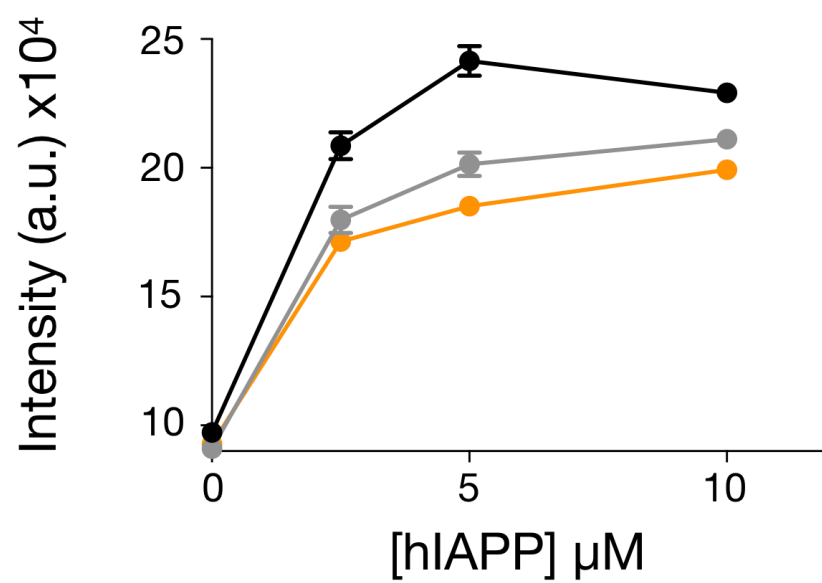


Figure S3. ELISA binding assay of hIAPP (2.5, 5, 10 μM) with GHsp70-hIAPP (black), Hsp70 WT (grey) and GHsp70-A β (yellow) variants.

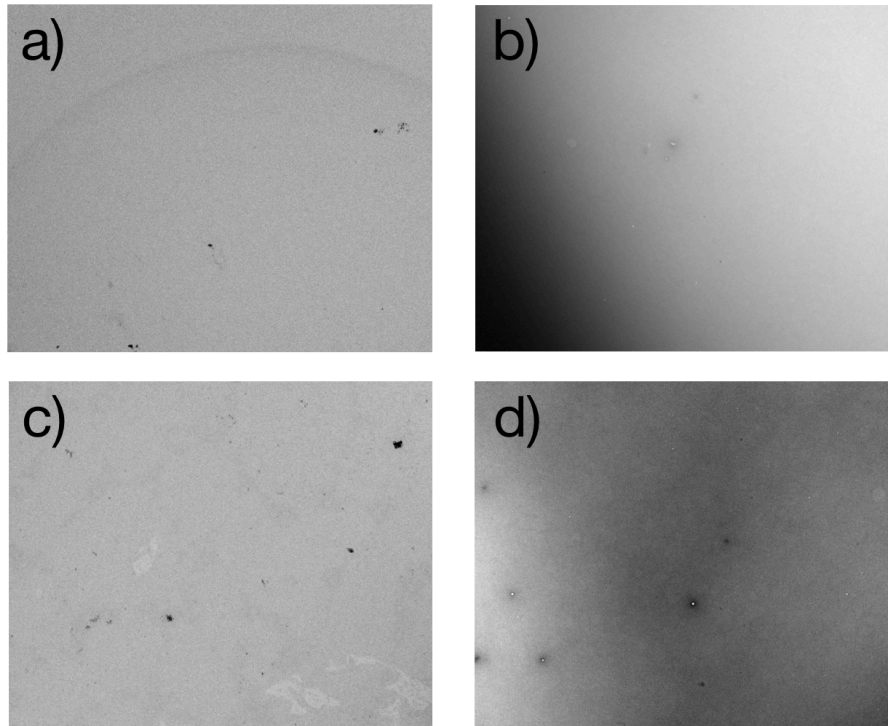


Figure S4. (a) TEM image of a solution containing 10 μM hIAPP alone at the beginning of the aggregation reaction. (b-d) TEM images of solutions containing 0.8 μM Hsp70 WT (b), GHsp70-A β (c), or GHsp70-hIAPP (d) in the absence of hIAPP after 15 hours of incubation at 37 $^{\circ}\text{C}$.