Supplemental Material

Single Stranded DNA oligonucleotides for construction of IAPP gene:

Wild Type IAPP Forward primer (IAPP-FOR) with NcoI restriction site.

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                  M  G
5′- GTGGCTGAGACCATGGGC AAA TGC AAC ACC GCG ACC TGC GCC ACC CAG CGT CTG GCG AAC TTT CTG
GTG CAT AGC AGC AAC AAC
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Wild Type IAPP Reverse primer (IAPP-Rev) with BamH I restriction site.

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5′- GACGCACCGGATCC ATA GGT GTT GCT GCC CAC GTT GGT GCT GCT CAG AAT CGC GCC AAA GTT GTT
GCT GCT ATG CAC CAG
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Primers for PCR amplification of full-length IAPP gene:

Forward: 5′-GTGGCTGAGACCATGGGC AAA
Reverse: 5'-GACGCACCGGATCC ATA GGT GTT

Primers for Random Mutagenesis:

Forward Primer: 5'- CTTTAATAAGGAGATATACC**ATG**GGC -3'
Reverse Primer: 5'-GCG GAG CCA GCG GAT CC -3'

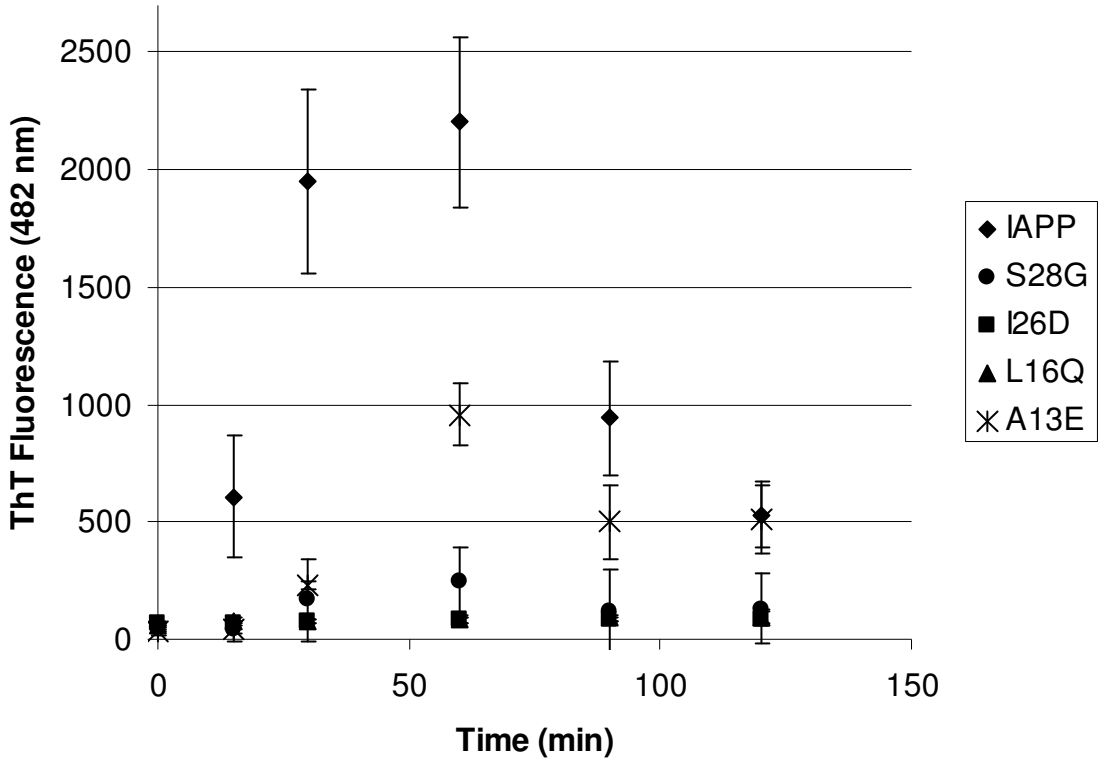

Figure 1S: Comparison of thioflavin T binding time course by selected variants and wild-type human IAPP. One representative time experiment is shown with the error bars representing the standard deviation of all trials ($n \geq 4$). Each aliquot of disaggregated IAPP was thawed and the HFIP removed over a stream of dry nitrogen gas. The resulting solid was dissolved in 20 mM tris buffer pH 7.40 to 106 μM. The samples were incubated at 37°C with shaking (200 rpm). 17 μL of each sample was removed at indicated time points and mixed with 663 μL of 12.0 μM thioflavin T in 20 mM Tris buffer pH 7.40. The thioflavin T mixture was incubated at room temperature in the dark for 5 minutes before recording the thioflavin T fluorescence spectrum (Ex_{450nm}) using a Hitatchi F-7000 fluorescence spectrophotometer.