

Supporting Materials

His18 Promotes the Reactive Oxidative Stress Production in Copper-ion Mediated Human Islet Amyloid Polypeptide Aggregation

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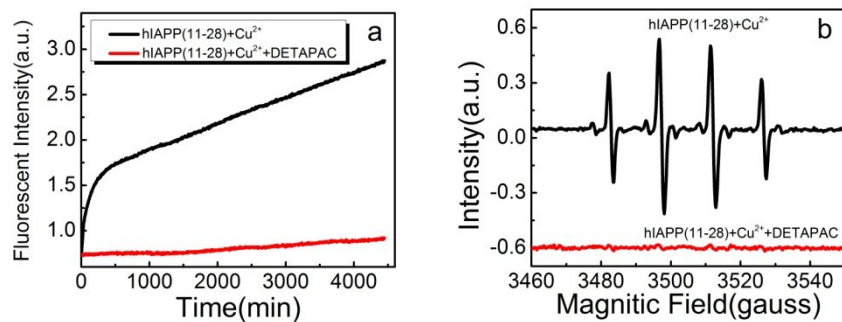


Figure S1. (a) H₂O₂ formation monitored by Amplex Red in the presence and absence of DETAPAC during the aggregation of hIAPP(11-28) co-incubated with Cu(II). (b) Hydroxyl radical EPR signal (DMPO spin trap) in the presence or absence of DETAPAC after 50 hours incubation of hIAPP(11-28) with Cu(II).

Thioflavin T(ThT) assay

A Fluoroskan ascent fluorescence spectrophotometer (Thermo Scientific Inc., USA) was used to record the kinetics of fibril formation progress. The fluorescence intensity was recorded every 5 minutes by using 440 nm excitation and 484 nm emission filters. To prepare samples for fluorescence, Cu^{2+} with different concentrations (2, 10, 100 and 200 μM), 100 μM hIAPP(11-28) and 50 μM ThT were added in 96-well microtitre plate (Corning Inc., USA). At least four set of measurements were carried out for each tested concentration of metal ions. And the final results were averaged.

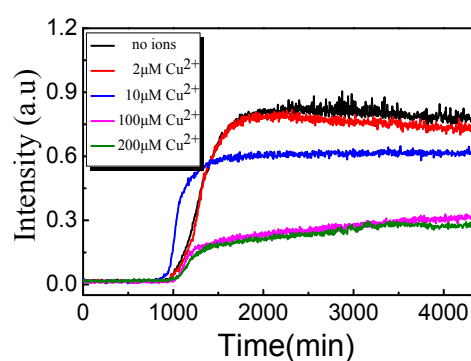


Figure S2. Kinetic analysis of hIAPP(11-28) fibril formation monitored by ThT fluorescence in the absence (black) and presence of 2 (red), 10 (blue), 100 (magenta), and 200 μM (olive) Cu^{2+} .

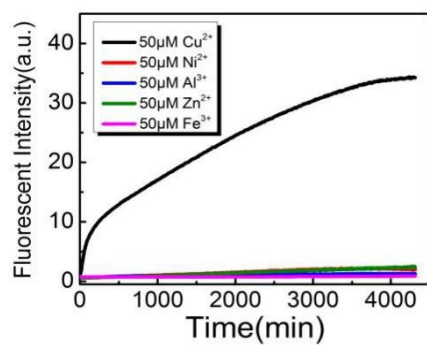


Figure S3. Kinetic analysis of H₂O₂ formation monitored by Amplex Red method in the presence of Cu²⁺ (black), Ni²⁺ (red), Al³⁺ (blue), Zn²⁺ (green) and Fe³⁺ (magenta) on the aggregation of hIAPP(11-28).

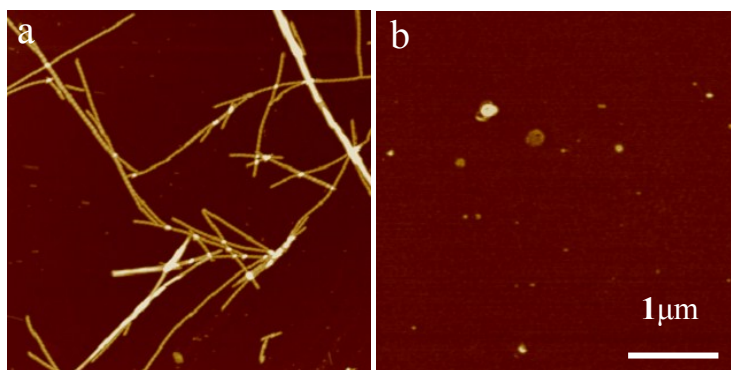


Figure S4. AFM images hIAPP and rIAPP fragments incubated at 37°C for one day. (a) hIAPP (11-28) and (b) rIAPP(11-28).