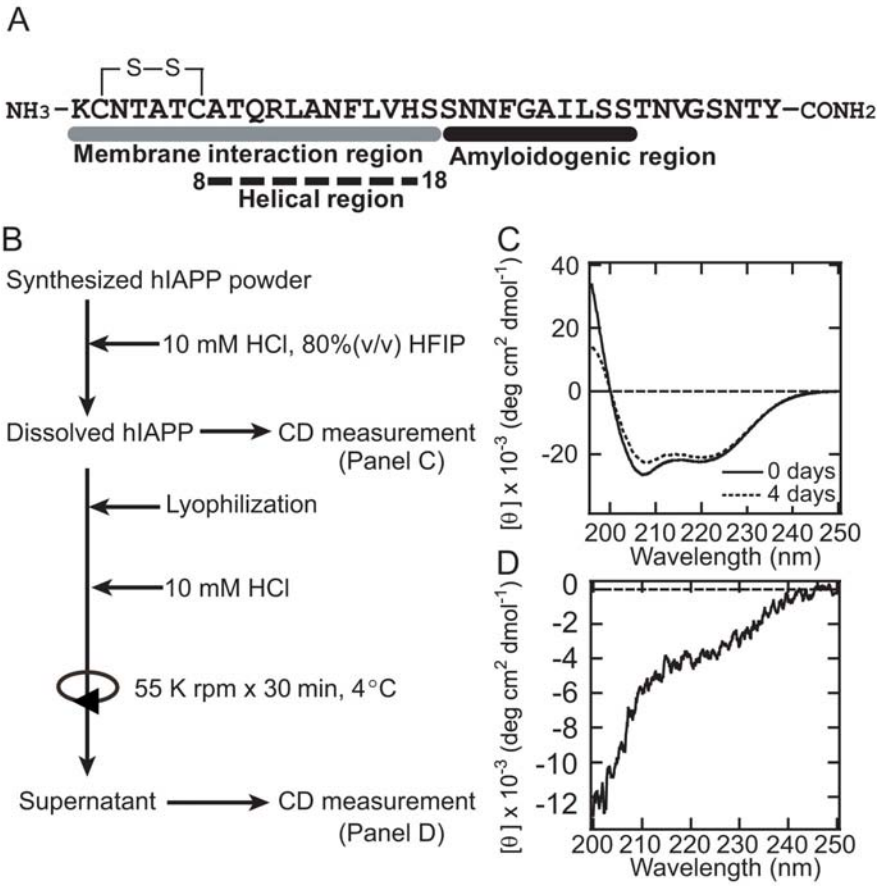
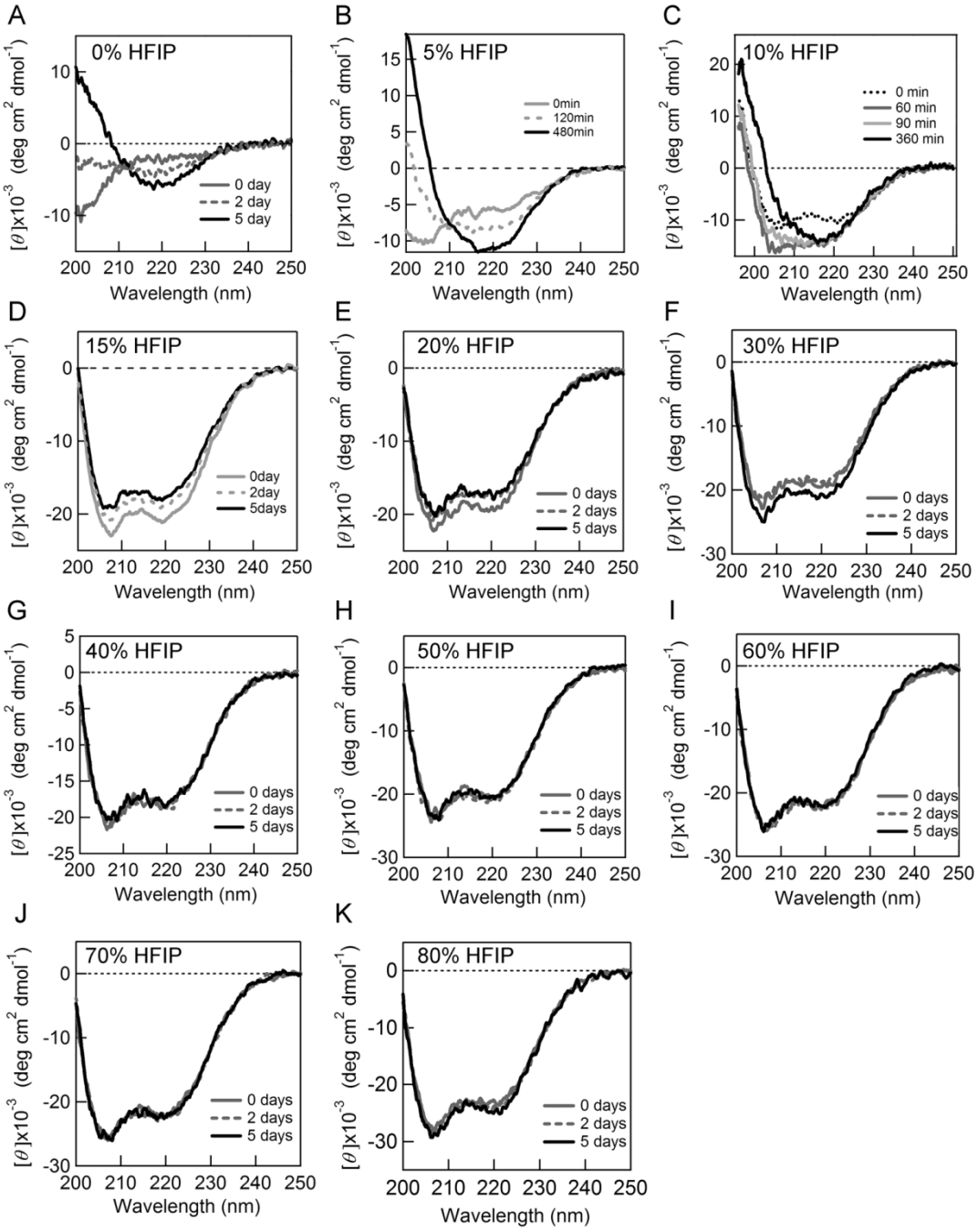
Supplemental Figures

Hexafluoroisopropanol induces amyloid fibrils of islet amyloid polypeptide by enhancing both hydrophobic and electrostatic interactions

Kotaro Yanagi, Mizue Ashizaki, Hisashi Yagi, Kazumasa Sakurai, Young-Ho Lee and Yuji Goto

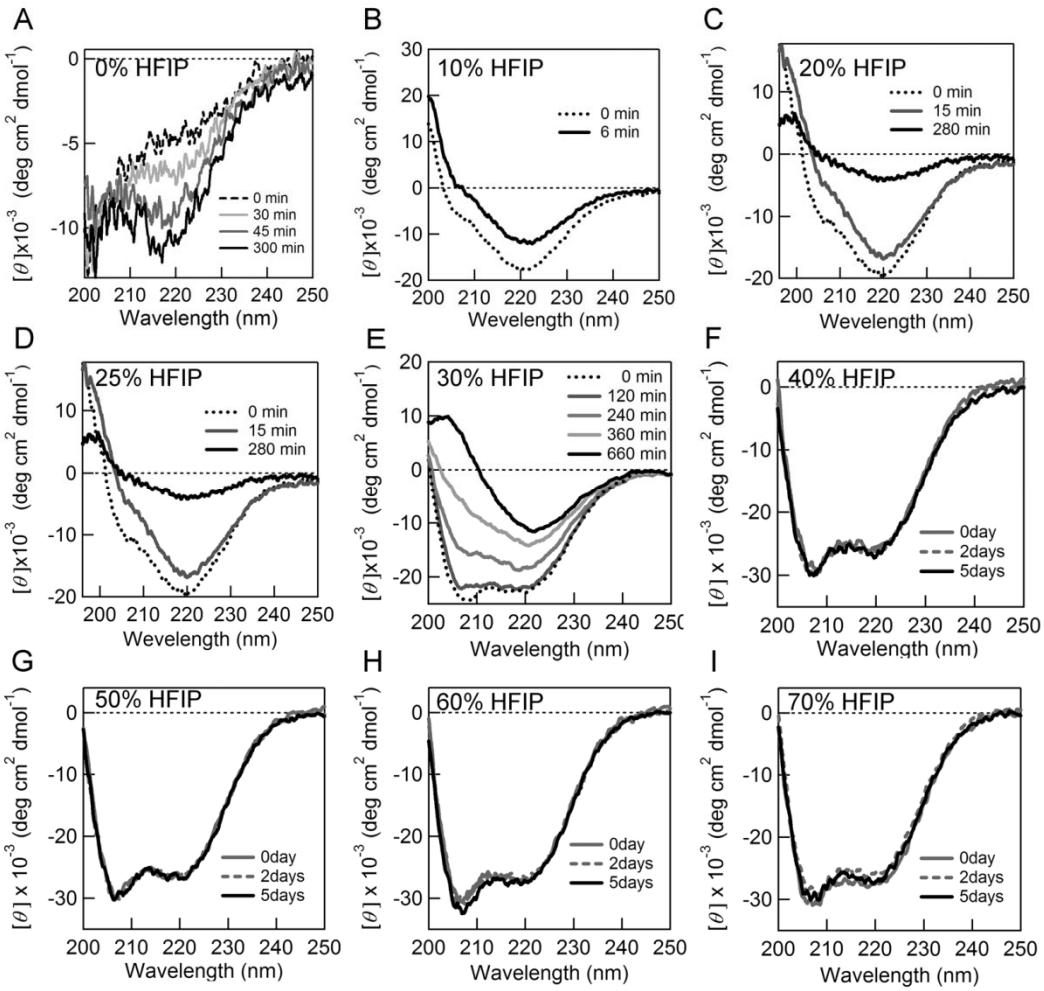


Supplemental Fig. S1. The sample preparation of hIAPP. (*A*) Amino acid sequence and structural properties of hIAPP. (*B*) Schematic diagram of the method used. (*C*) Far-UV CD spectra of hIAPP in 10 mM HCl with 80% (v/v) HFIP (solid line: 0 days, dashed line: 4 days). (*D*) Far-UV CD spectrum of hIAPP in 10 mM HCl after ultracentrifugation.



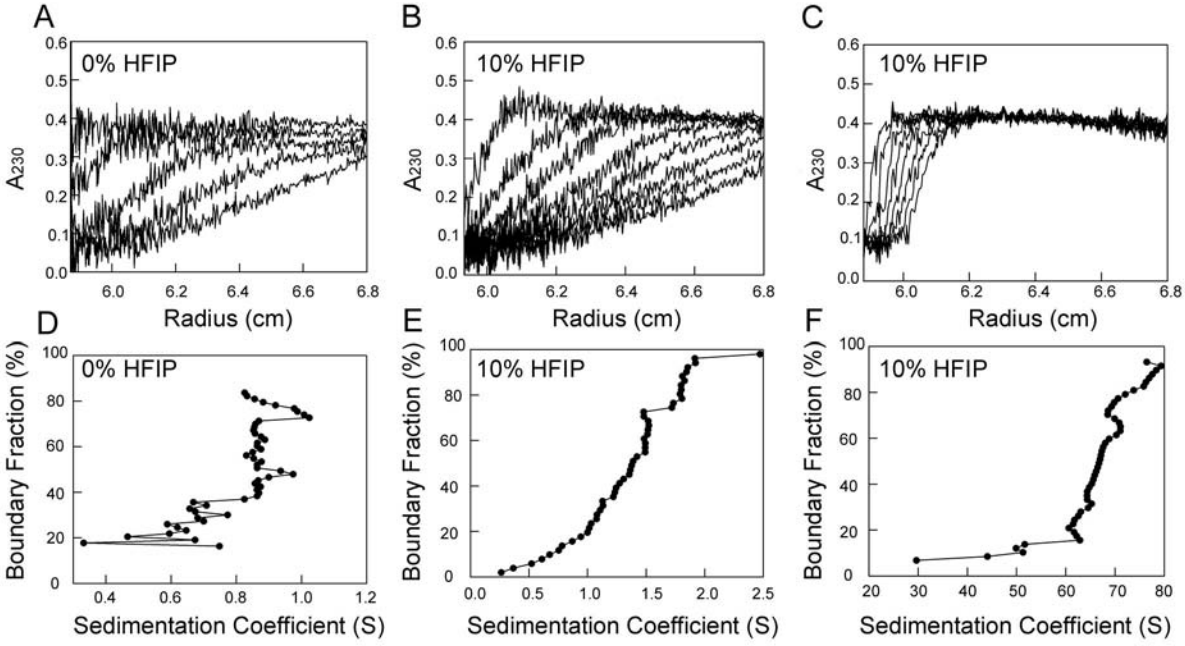
Supplemental Fig. S2. Time-dependent changes of the far-UV CD spectra of 25 μM hIAPP at various concentrations of HFIP in 10 mM HCl at 25°C.

Yanagi et.al., Supplemental Fig. S2



Supplemental Fig. S3. Time-dependent changes of the far-UV CD spectra of 25 μM hIAPP at various concentrations of HFIP in 10 mM sodium phosphate buffer at pH 7.0 and at 25°C.

Yanagi et.al., Supplemental Fig. S3



Supplemental Fig. S4. Sedimentation velocity experiments of 25 μM hIAPP of various conformations in the absence and presence of 10% (v/v) HFIP in 10 mM HCl and 25°C. (*A*-*C*) Sedimentation boundary profiles of hIAPP oligomers in the absence (*A*) and presence (*B*) of 10% (v/v) HFIP and preformed hIAPP fibrils in the presence of 10% (v/v) HFIP (*C*). Centrifugation was performed at 55,000 rpm (230,000 × *g*) (*A*-*B*) and 6,000 rpm (2,700 × *g*) (*C*) by monitoring the absorbance at 230 nm at intervals of 200 min (*A*), 100 min (*B*), and 25 min (*C*), respectively. Integral distribution plots of the sedimentation coefficient ($s_{20,w}$), corrected for the viscosity and density of the solvent using that of water at 20°C, were shown in the absence (*D*) and presence (*E*, *F*) of 10% (v/v) HFIP. Sedimentation velocity experiments were performed using a Beckman-Coulter Optima XL-A analytical ultracentrifuge (Fullerton, CA) after precentrifugation at 3,000 rpm (700 × *g*) for 5 min. The experimental sedimentation coefficients were corrected to $s_{20,w}$, the sedimentation coefficient expressed in terms of the standard solvent of water at 20°C, with the van Holde-Weischet method in the software UltraScan 8.0 (www.ultrascan.uthscsa.edu). Molecular weights of oligomeric species were estimated using $s_{20,w}$ distributions, frictional ratios, and partial specific volumes with the UltraScan software.

Supplemental movies

Supplemental Movie S1: Real-time observation of fibril growth under acidic conditions in the presence of 10% (v/v) HFIP and 5 μM ThT at 25 °C.

Supplemental Movie S2: Real-time observation of fibril growth under neutral conditions (pH 7.0) in the presence of 5 μM ThT at 25 °C.

Supplemental Movie S3: Real-time observation of fibril growth under neutral conditions in the presence of 30% (v/v) HFIP and 5 μM ThT at 25 °C.