**Supplementary Figure Legends**

**Figure S1:** Analysis of purified Hsc70 and its structural domains by size exclusion chromatography and SDS-PAGE (inset) as described under materials and methods.

**Figure S2:** **hIAPP monomer (control)**

Residual secondary structure content corresponding to α-helix, β-sheet, random coil, and turn regions in hIAPP monomer.ThehIAPP monomer (PDB code: 2L86) shows a stable α-helical region around residues 8-16. The conformational ensemble of hIAPP monomer is prominently random coil with a coil content of 68%. β-sheet and turn regions constitute a small fraction of the residual secondary structure in the hIAPP monomer ensemble.

**Figure S3: hIAPP monomer and Hsc70+helix A complex**

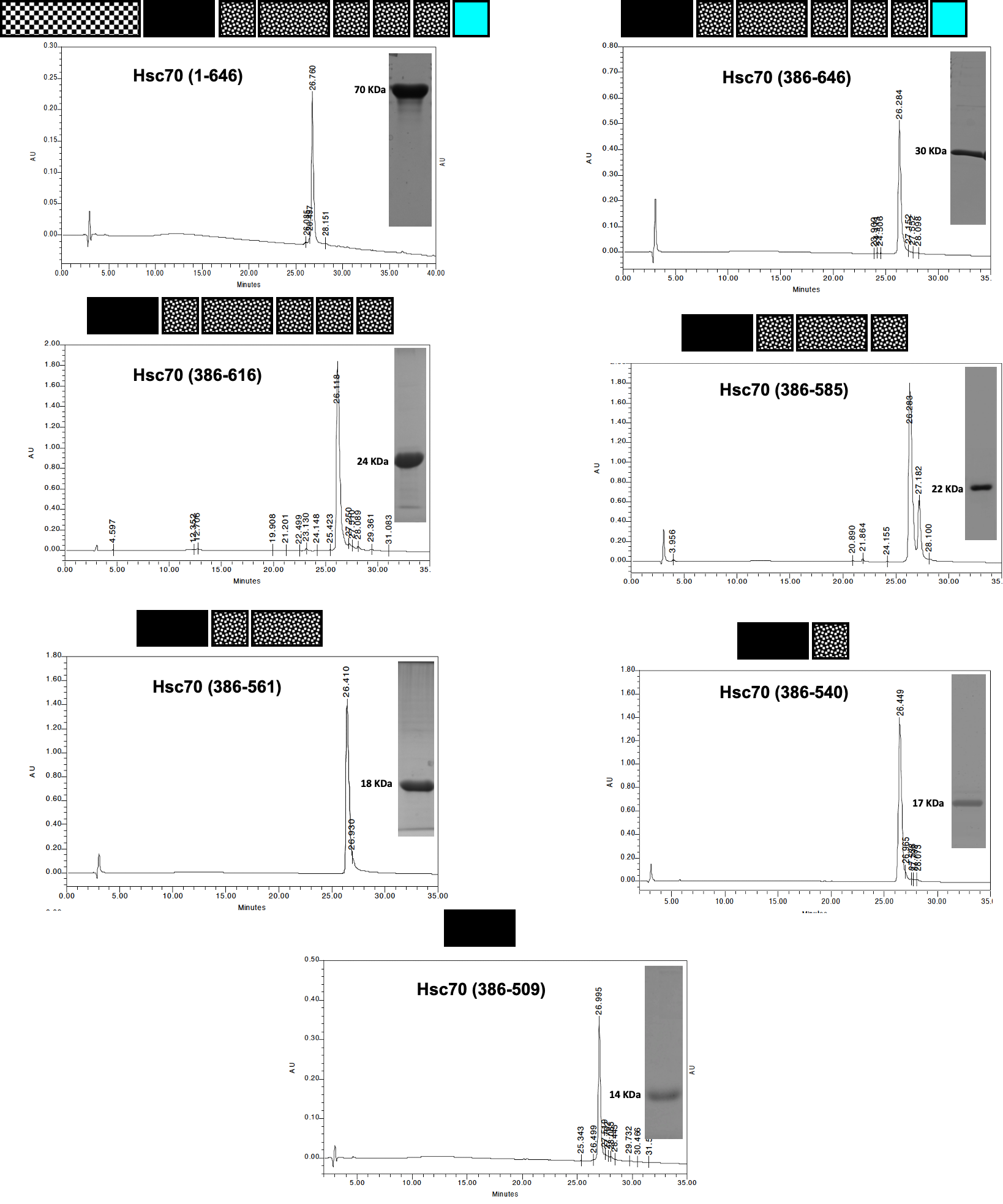
**A: Residual secondary structure content in hIAPP monomer.** hIAPP shows stable helical regions around residues 8-16 and an increase in β-sheet content around residues 24-32. In the presence of helix, A, the residual β-sheet content in hIAPP decreases to ~11%.

**B: Number of interchain H-bonds formed between hIAPP and the two exposed β-strand edges of Hsc70-β-sandwich.** AlthoughhIAPP can directly bind to the two exposed β-strand edges of the chaperone by forming interchain H-bonds, binding to the β-strand edges along helix A is preferred with increased interchain H-bonds. The representative structures highlight the binding of hIAPP to the two exposed β-strand edges along with binding to helix A. The N-terminal is shown in sphere. The hot-spot regions within Hsc70+helix A are color-coded according to the binding probability and the hIAPP peptide is shown in grey.

**C: Per-residue binding probability in hIAPP.** Hydrophobic interactions mostly stabilize the binding around residues 11-29 of hIAPP. The amyloidogenic region has stronger binding with Hsc70+helix A. The residues with high binding propensity have higher probability to adopt β-sheet and α-helix structures.

**Supplementary Figures**

**Figure S1:**



**Figure S2:**



**Figure S3:**

A screenshot of a graph

Description automatically generated