Supporting Information

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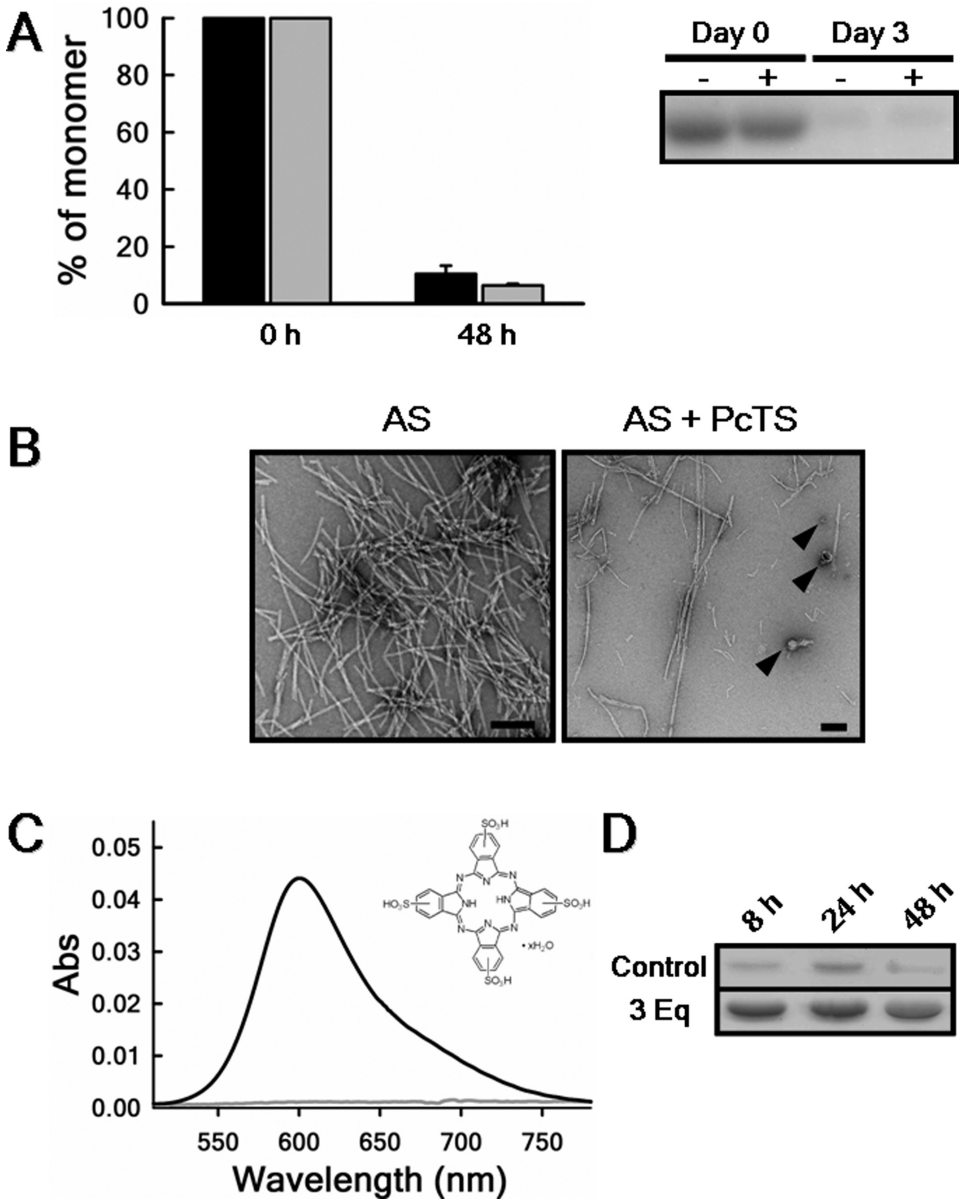

Fig. S1. Biophysical studies on the α-synuclein (AS) aggregates generated in the presence of phthalocyanine tetrasulfonate (PcTS). (*A*) The level of remaining soluble AS monomers in the absence (black bars) and presence of 100 μM PcTS (gray bars) was determined by 1D ^{1}H-NMR spectroscopy at 0 and 48 h of the aggregation assay (100 μM AS samples). (*Inset*) SDS/PAGE of protein remaining soluble along the aggregation assays in the absence ($-$) and presence ($+$) of 100 μM PcTS. (*B*) Representative negative-stain EM images of AS aggregates (100 μM AS samples) generated in the absence and presence of 300 μM PcTS. (Scale bars, 200 nm.) Nonfibrillar AS aggregates are indicated by arrowheads. (*C*) Electronic absorption spectra of supernatant (gray line) and pellet (black line) fractions of PcTS generated aggregates of AS (100 μM AS samples) in the presence of 100 μM PcTS. The structure of the PcTS compound is shown in the inset. (*D*) Sarkosyl solubilization of pellets during the course of the aggregation assay, in the absence (control) and presence (3 Eq) of three equivalents of PcTS.

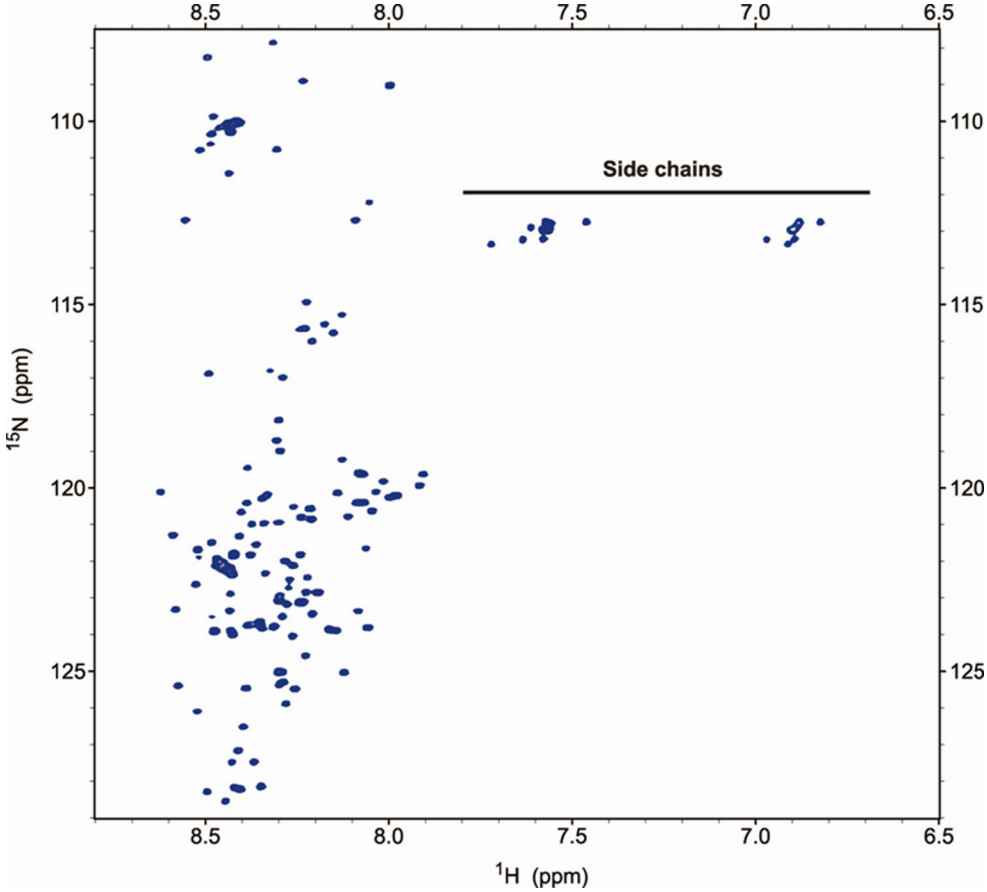

Fig. S2. ^{1}H-^{15}N HSQC spectrum of 100 μM AS recorded in buffer A, at 15 °C.

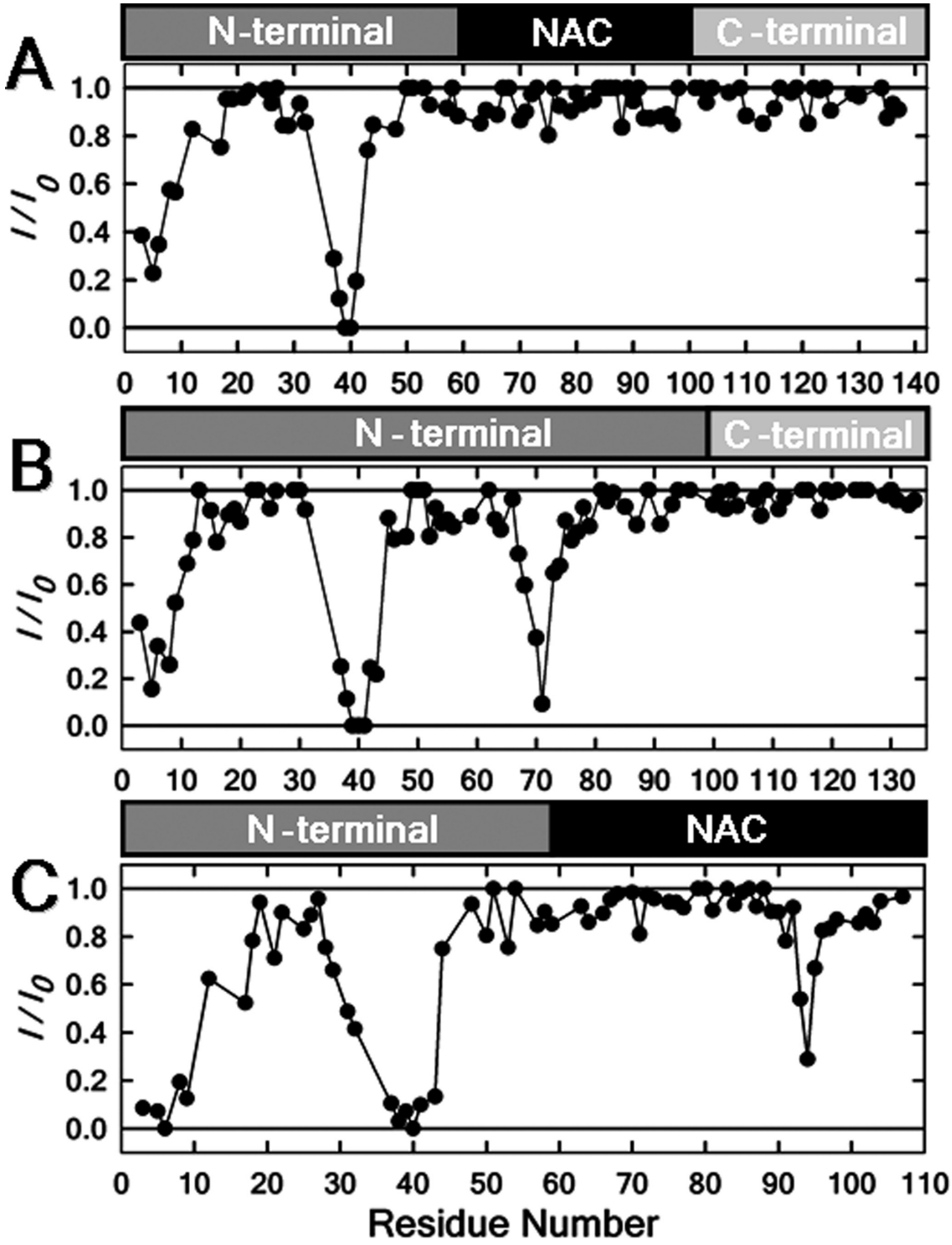

Fig. S3. The N-terminal region of AS represents the main PcTS binding interface. I/I_0 profiles of the backbone amide groups of 100 μM AS (*A*), BS (*B*), and 1–108 AS (*C*) in the presence of 50 μM PcTS.

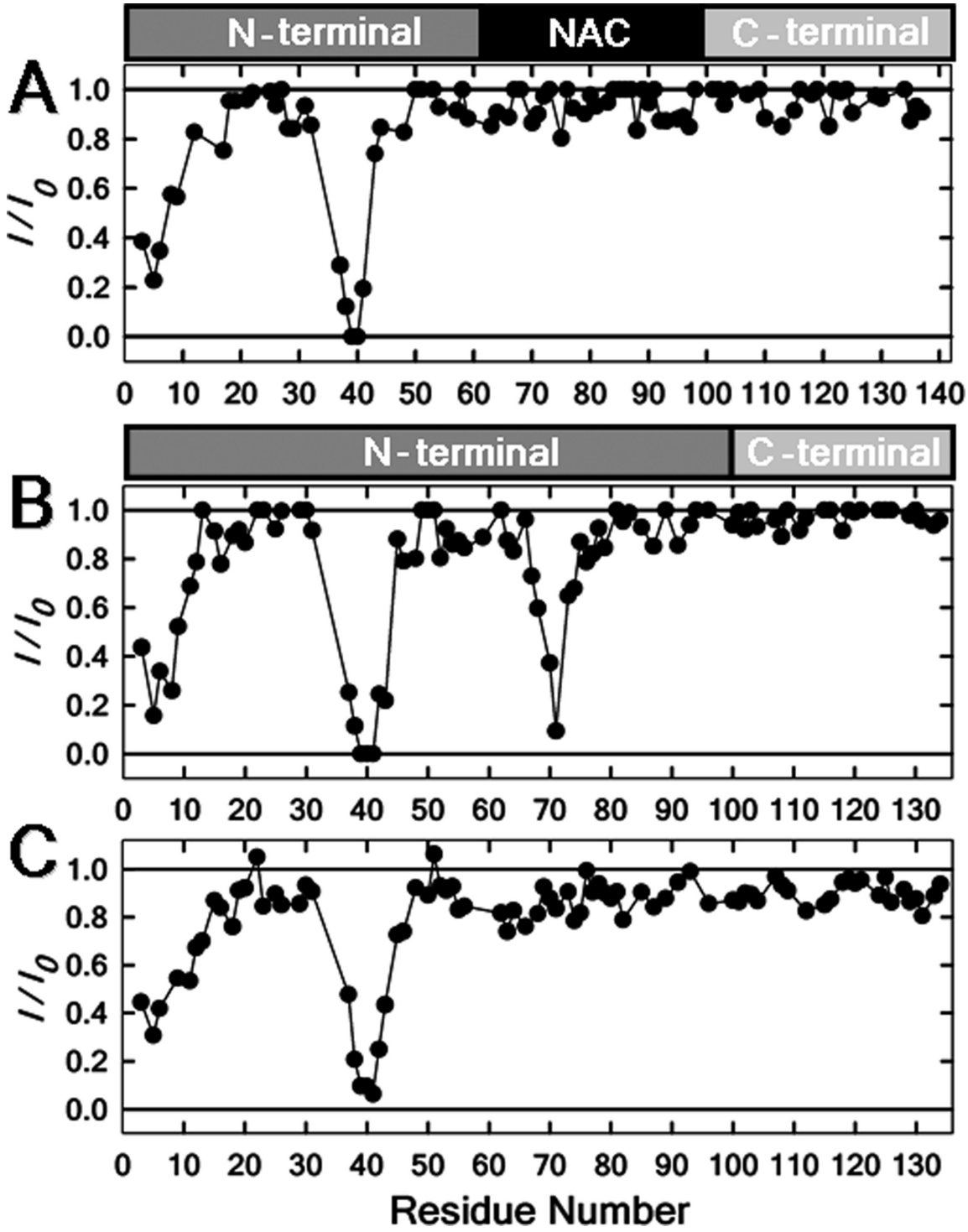

Fig. S4. The presence of Phe-71 is critical for PcTS binding to the sequence 67–73 of BS. I/I_0 profiles of the backbone amide groups of 100 μM AS (*A*), BS (*B*), and F71A BS (*C*) in the presence of 50 μM PcTS.

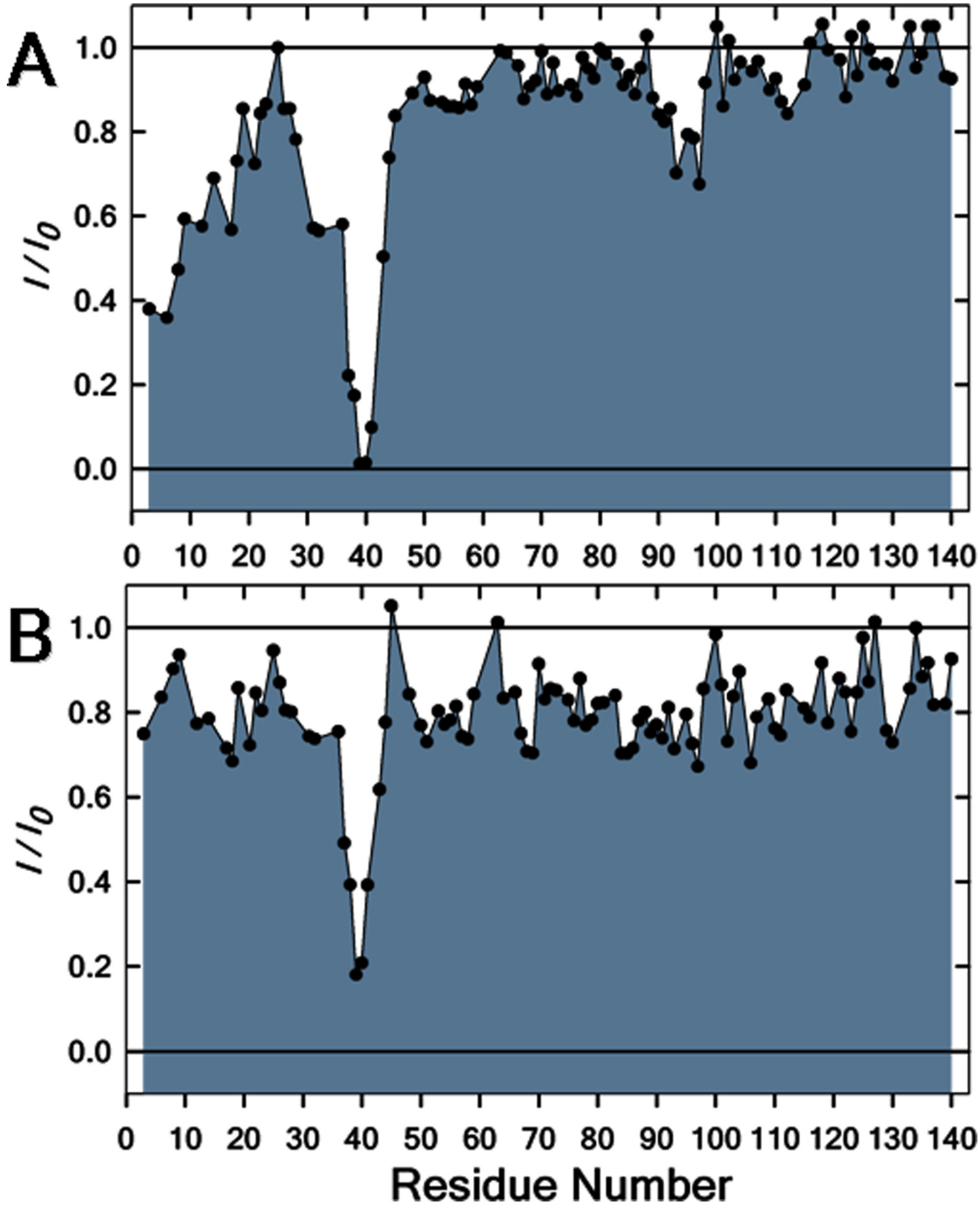

Fig. S5. Influence of electrostatic interactions on PcTS binding to AS. ^{1}H-^{15}N HSQC spectra of 100 μM AS in the presence of 50 μM PcTS registered in buffer A (*A*) and in buffer A with 200 mM NaCl (*B*).

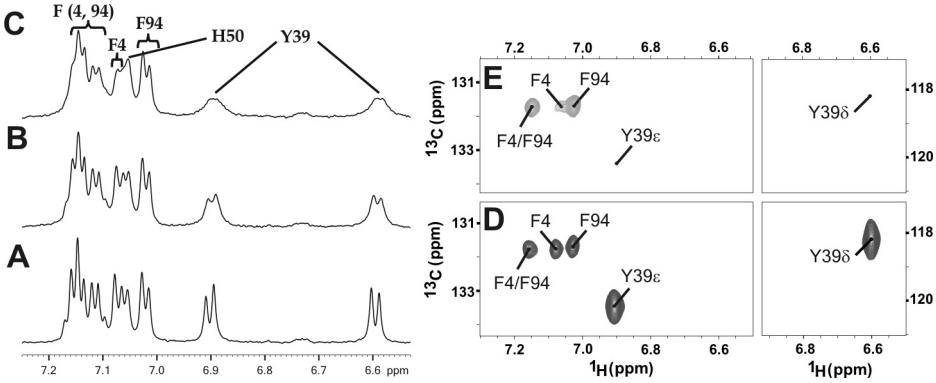

Fig. S6. Tyr 39 is the main anchoring residue for PcTS binding to AS. One-dimensional ^{1}H-NMR spectra of 400 μM 1–108 AS in the presence of 0 (*A*), 8 (*B*), and 12 (*C*) μM PcTS. ^{1}H-^{13}C HSQC spectra of 200 μM 1–108 AS in the presence of 0 (*D*) and 20 (*E*) μM PcTS.

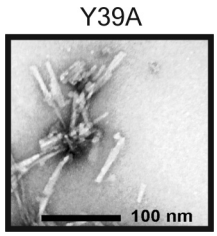

Fig. S7. Negative-stain EM image of Y39A AS taken after 1 week of incubation at 37 °C under constant stirring. (Scale bar, 100 nm.)

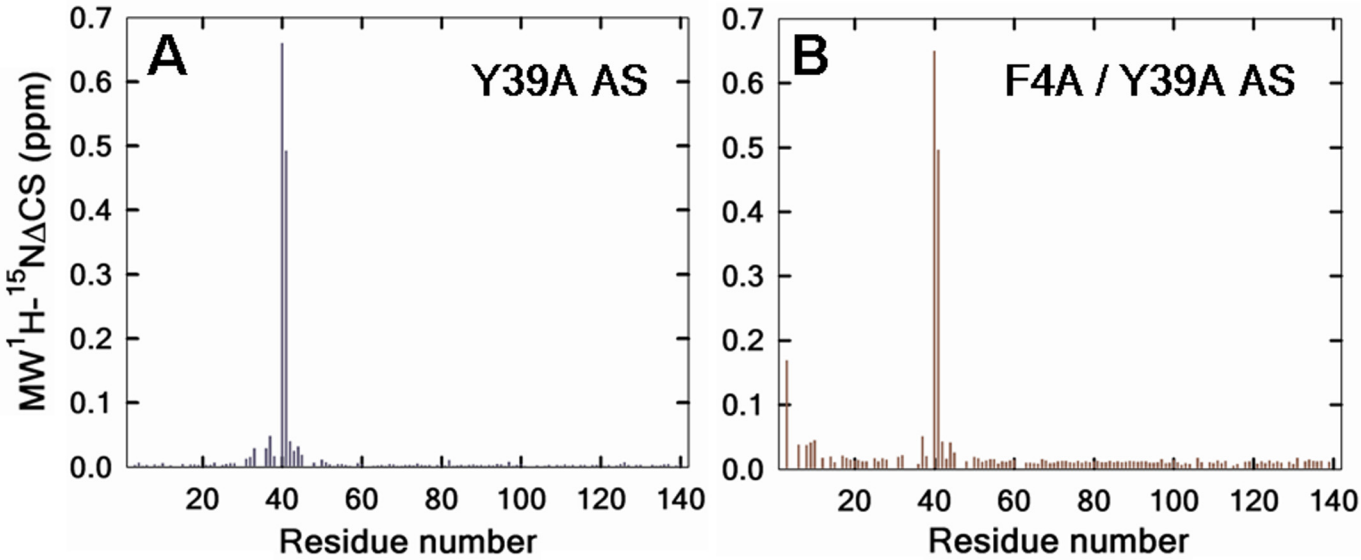

Fig. S8. Differences in the mean weighted chemical shifts displacements measured for Y39A AS (*A*) and F4A/Y39A AS (*B*) species with respect to wild-type AS. Mean weighted chemical shifts displacements (MW^{1}H-^{15}NΔCS) were calculated as $[(\Delta\delta^{1}H)^{2} + (\Delta\delta^{15}N)^{2}/25]^{1/2}$.