

Electronic Supplementary Information
for

**Electrochemical flow injection analysis of interaction
between pyrroloquinoline quinone (PQQ) and α -synuclein
peptides related to Parkinson's disease**

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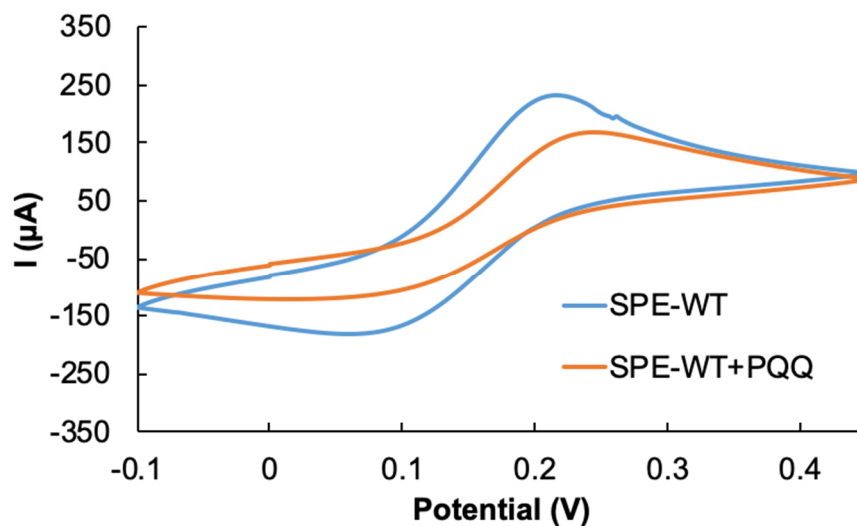


Fig. S1 Cyclic voltammograms of the WT-modified SPE before (blue) and after (orange) interaction with PQQ at a scan rate of 100 mV/s with 10 mM $[\text{Fe}(\text{CN})_6]^{3-/4-}$ as the redox probe in 0.1 M NaClO_4 (pH 7.0).

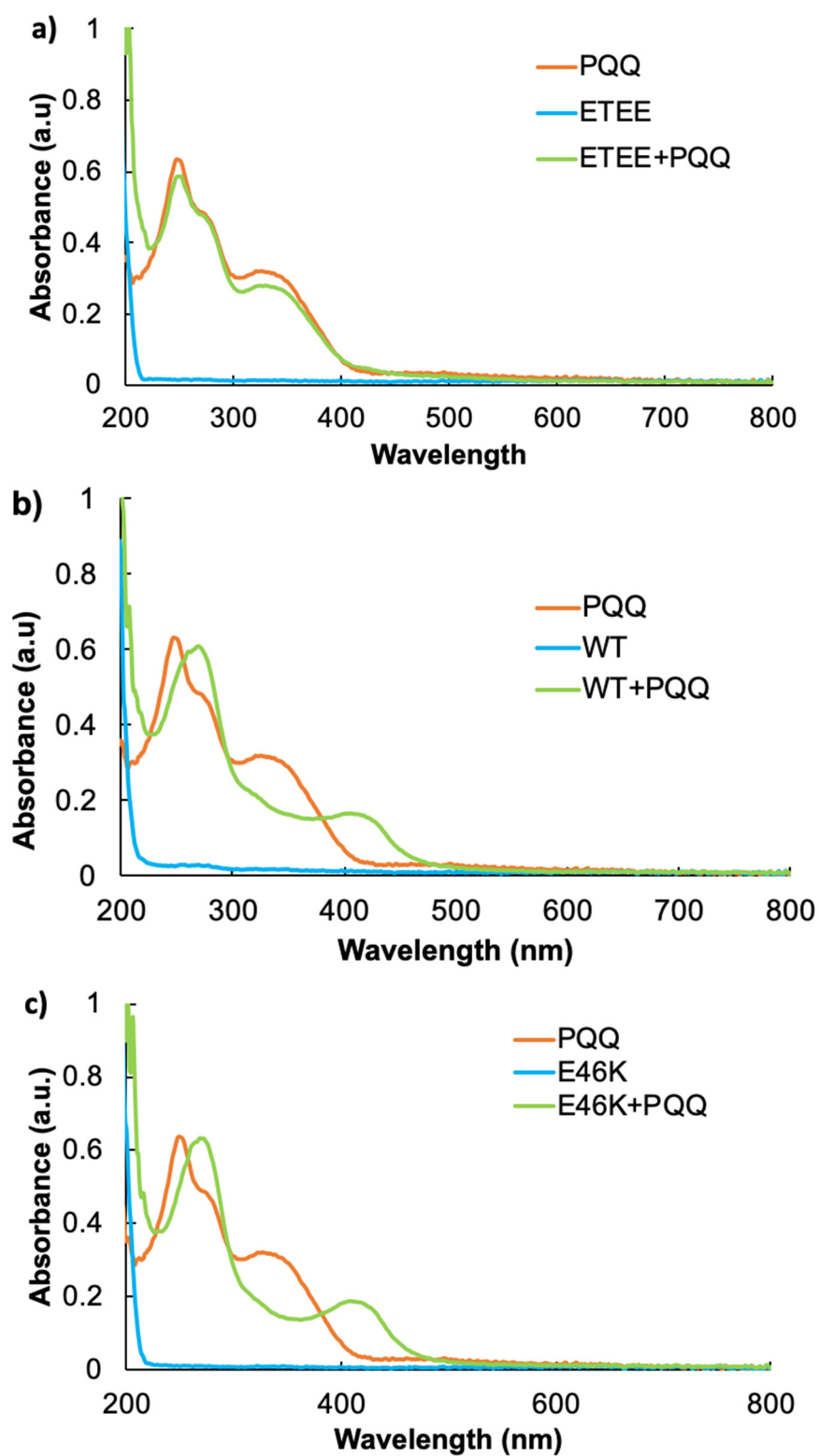


Fig. S2 UV-vis spectra of 1 mM PQQ (orange), 1 mM peptide solution (blue), and peptide-PQQ complex (green) different species of α -syn peptides a) ETEE, b) WT, and c) E46K.

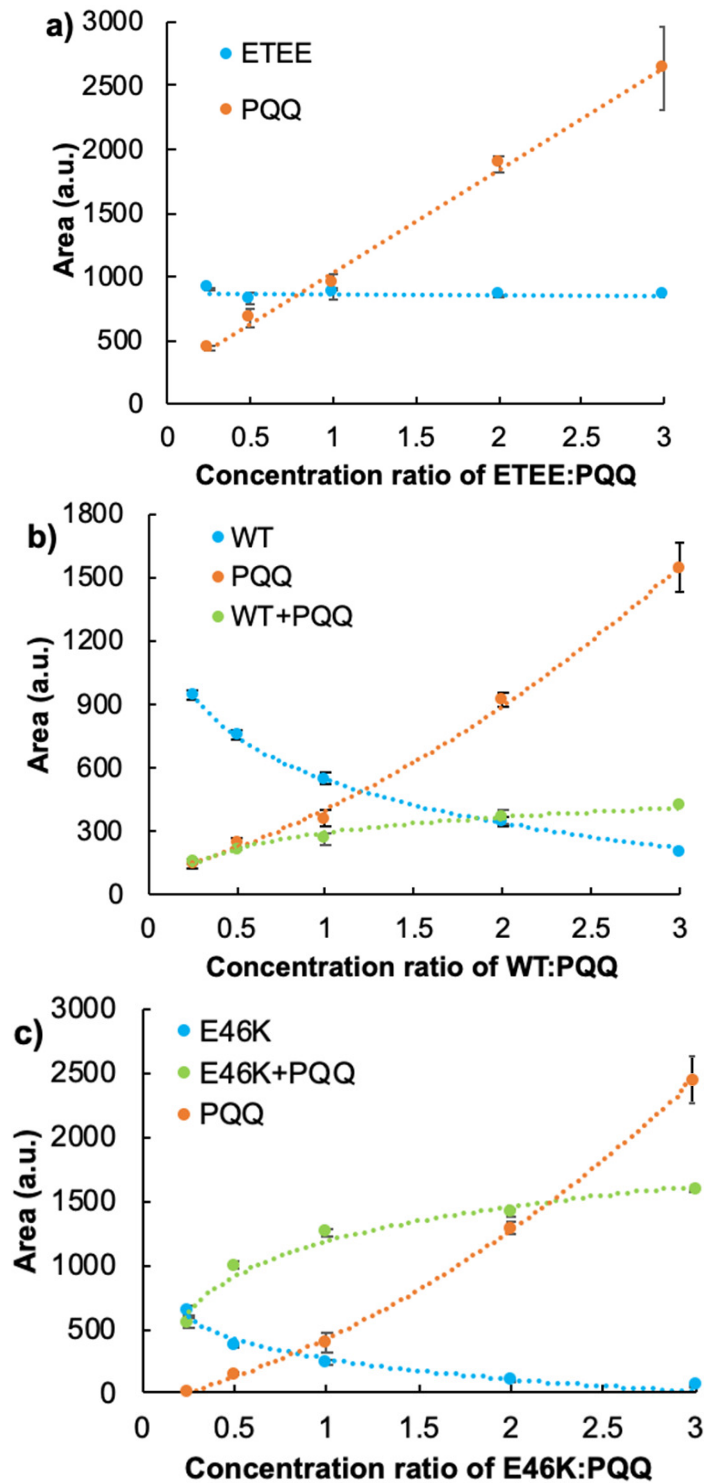
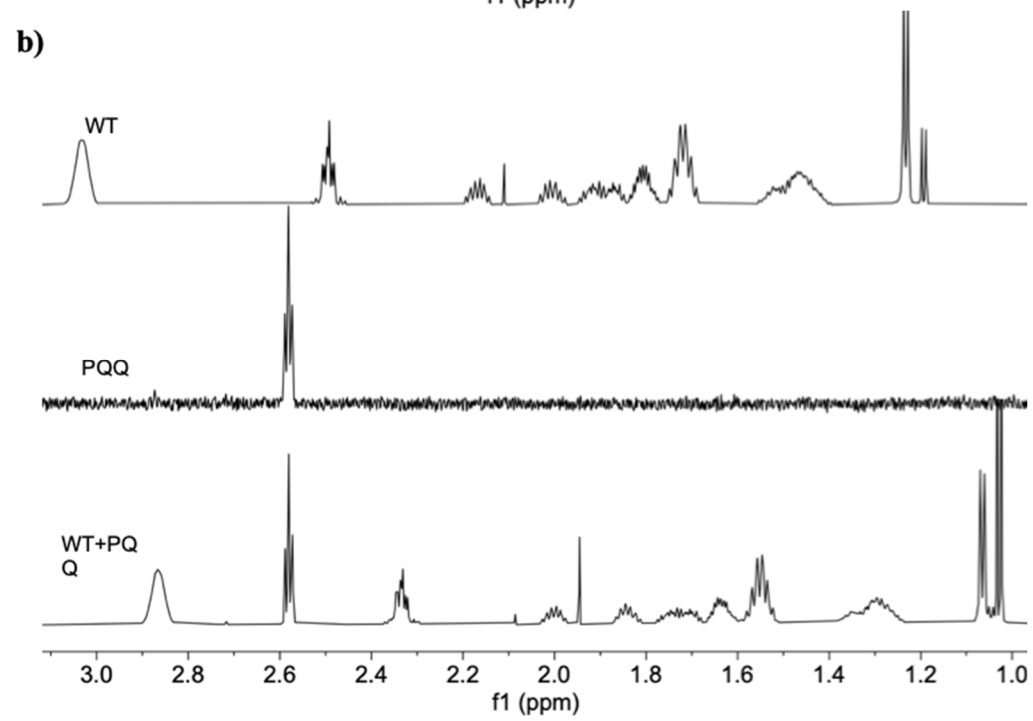
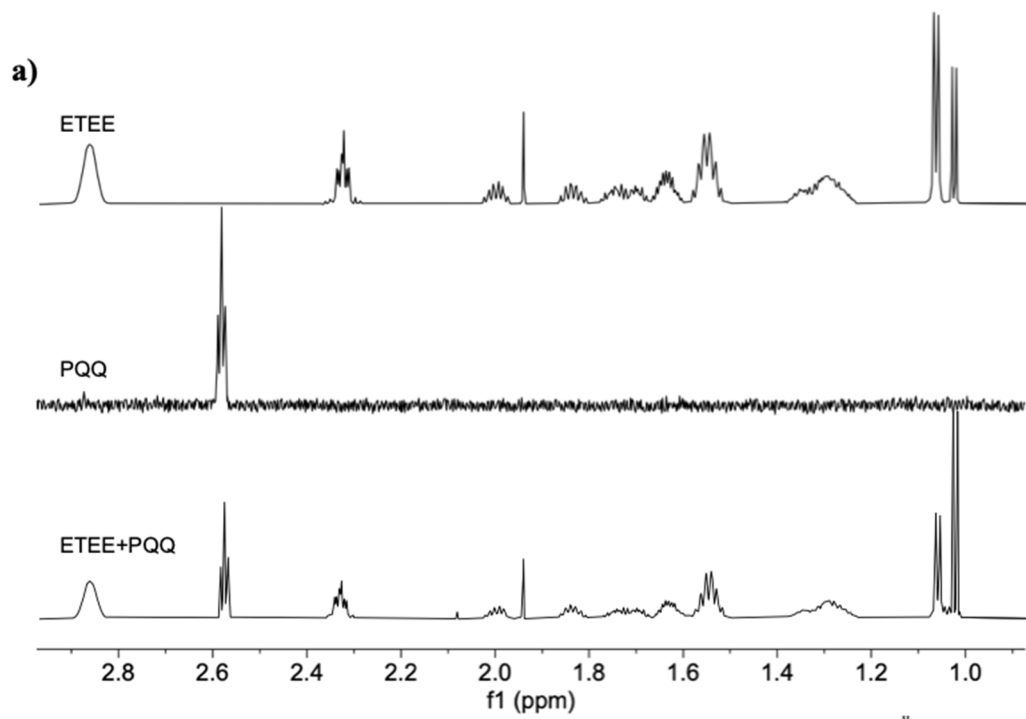


Fig. S3 Plots for the HPLC signals (area under the curve) analyzing the different peptide and PQQ ratios; with peptides alone in blue, peptides and PQQ in green, and PQQ alone in orange for different species of α -syn peptides a) ETEE, b) WT, and c) E46K. Error bars represent the standard deviation of triplicate measurements ($n=3$).



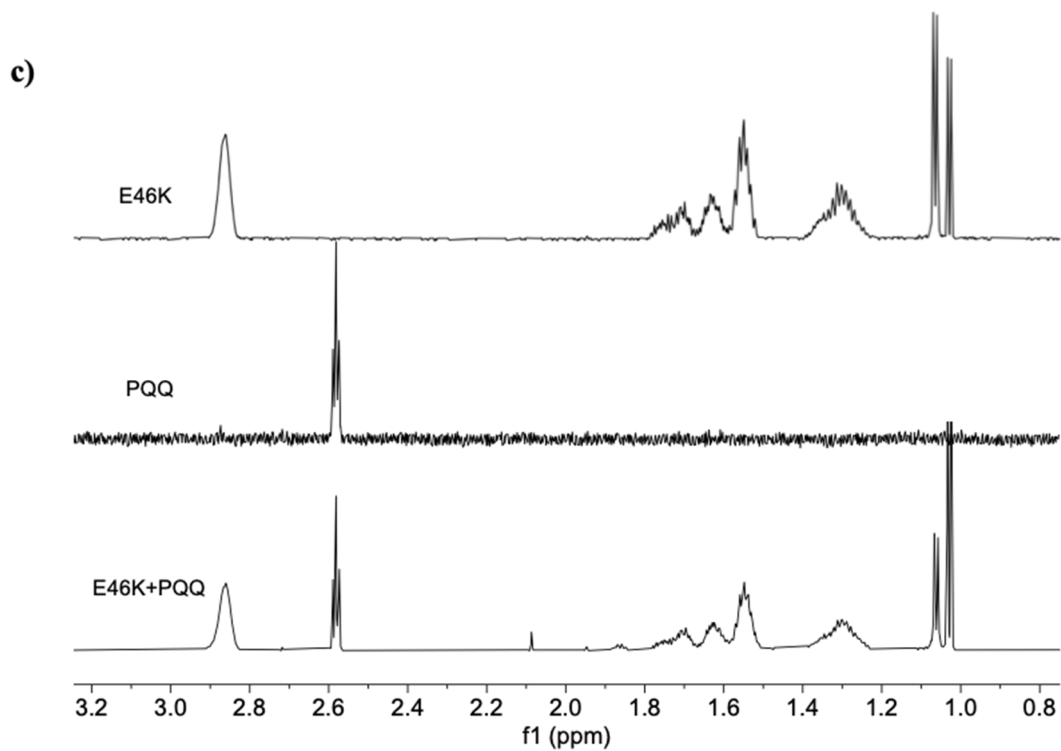
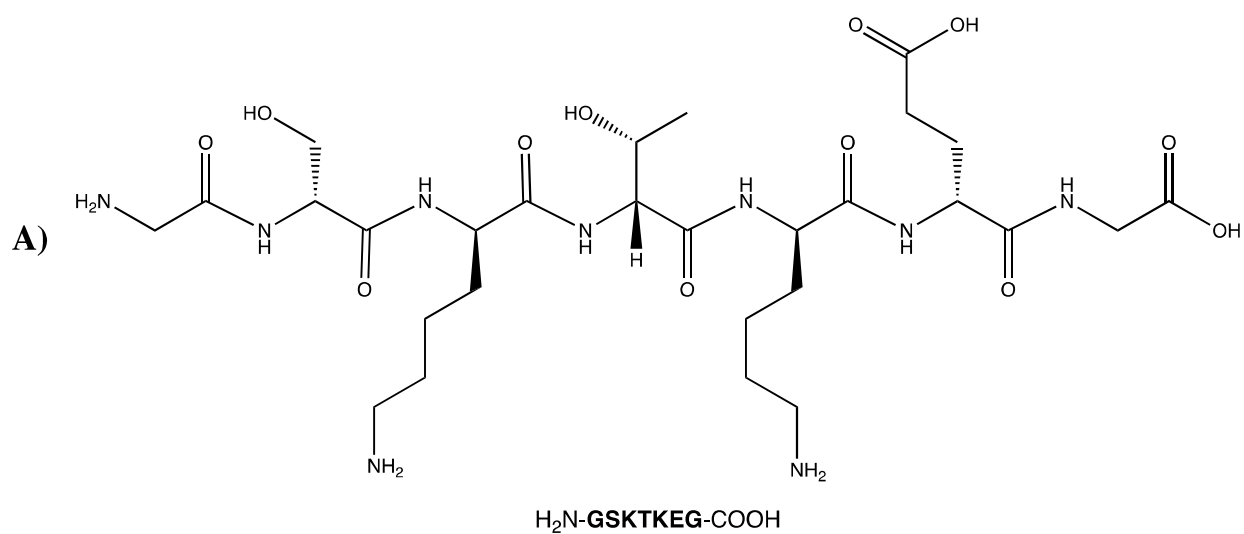


Fig. S4 Up-field region H^1 -NMR of peptides alone, PQQ alone, and peptide-PQQ complexes for a) ETEE, b) WT, and c) E46K.



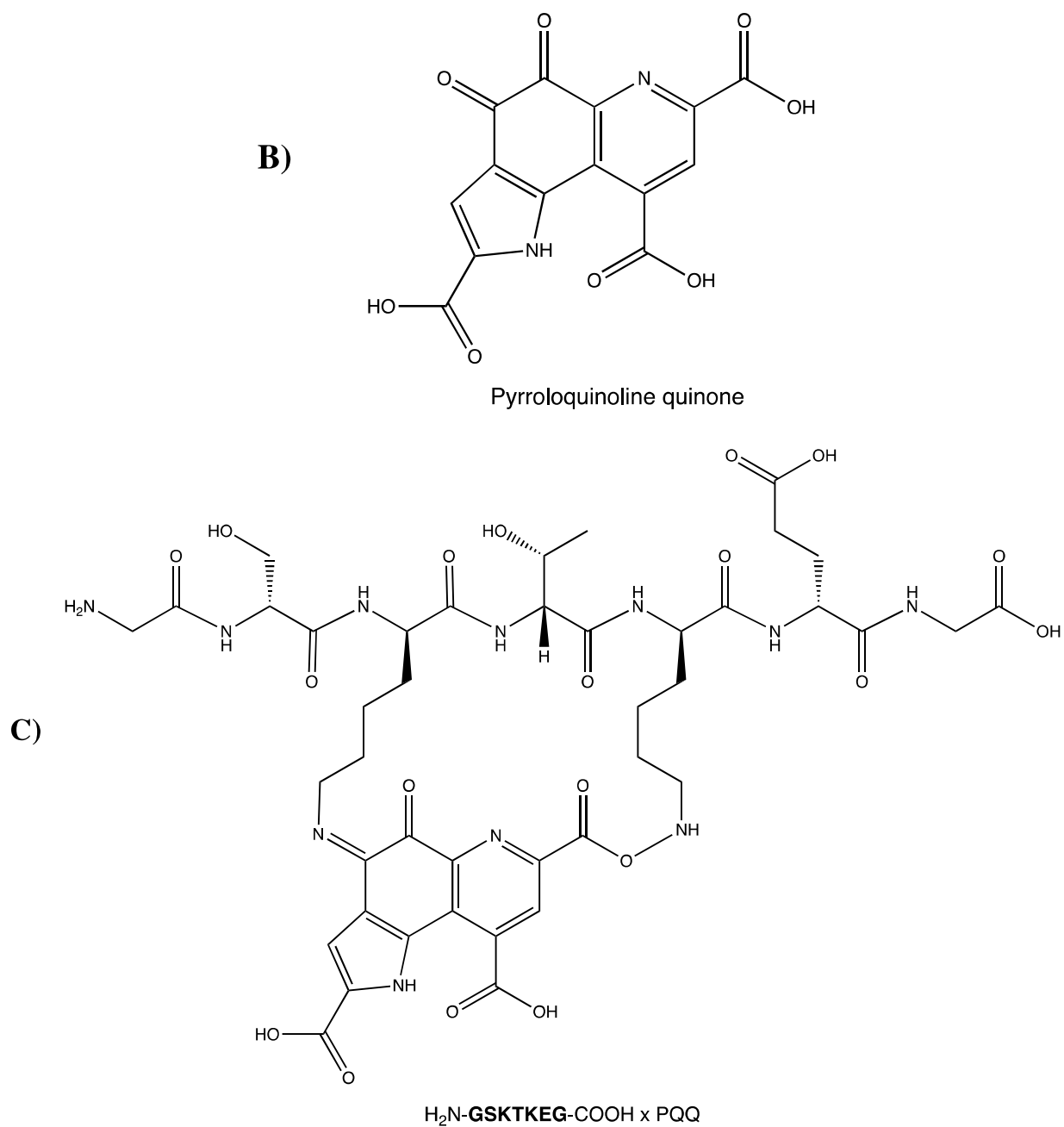


Fig. S5 Schematic illustration of A) WT peptide (GSKTKEG), B) Pyrroloquinoline quinone (PQQ) and C) the proposed structure of PQQ conjugated with WT peptide.

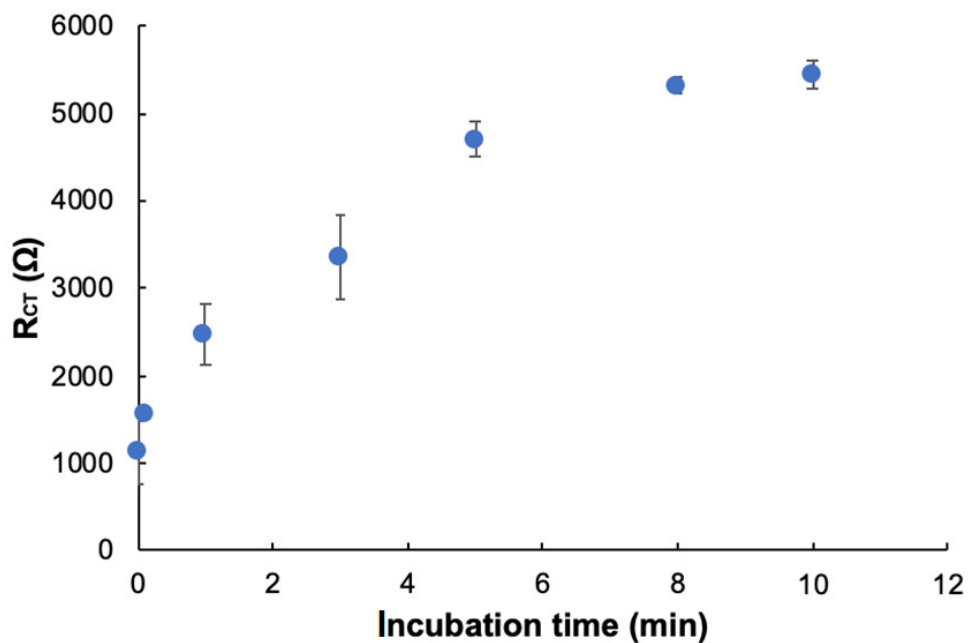


Fig. S6 Plot for the dependence of R_{CT} on WT peptide-modified SPEs incubated with $0.01 \mu\text{M}$ PQQ for different durations of incubation. Error bars represent the standard deviation of triplicate measurements ($n=3$).

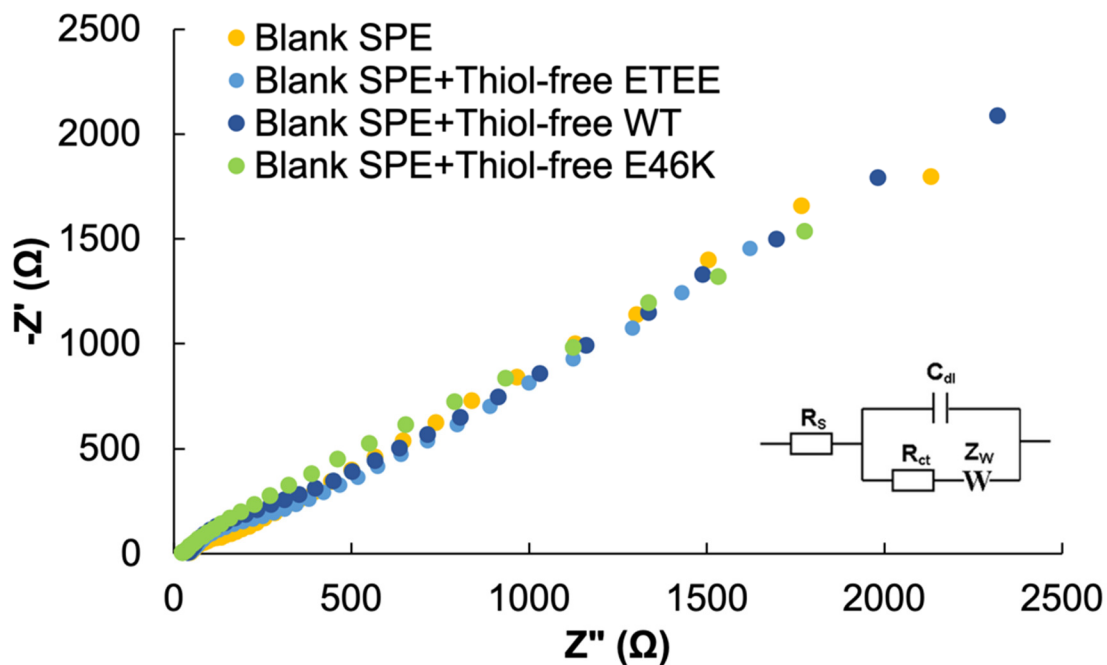


Fig. S7 Nyquist plot of (yellow) blank gold screen-printed electrodes (SPEs) incubated with thiol-free (light blue) ETEE, (dark blue) WT and (green) E46K peptides. The redox probe was 10 mM $[\text{Fe}(\text{CN})_6]^{3-/4-}$ in 0.1 M NaClO_4 (pH 7.0).

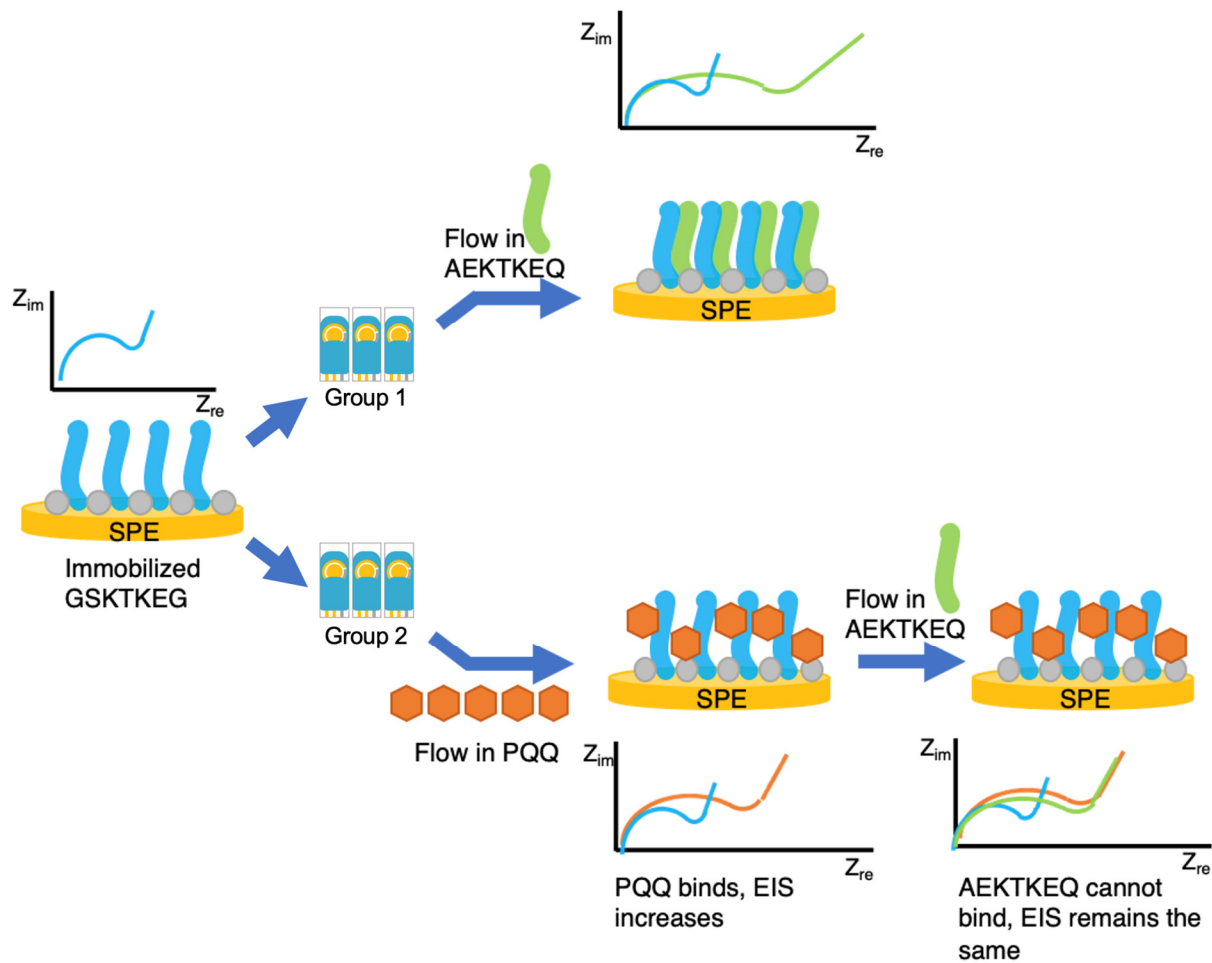


Fig. S8 Schematic illustration of the experimental design for studying the effects of PQQ on the intramolecular interactions of α -syn misfolding as described in the results shown in Figure 8.