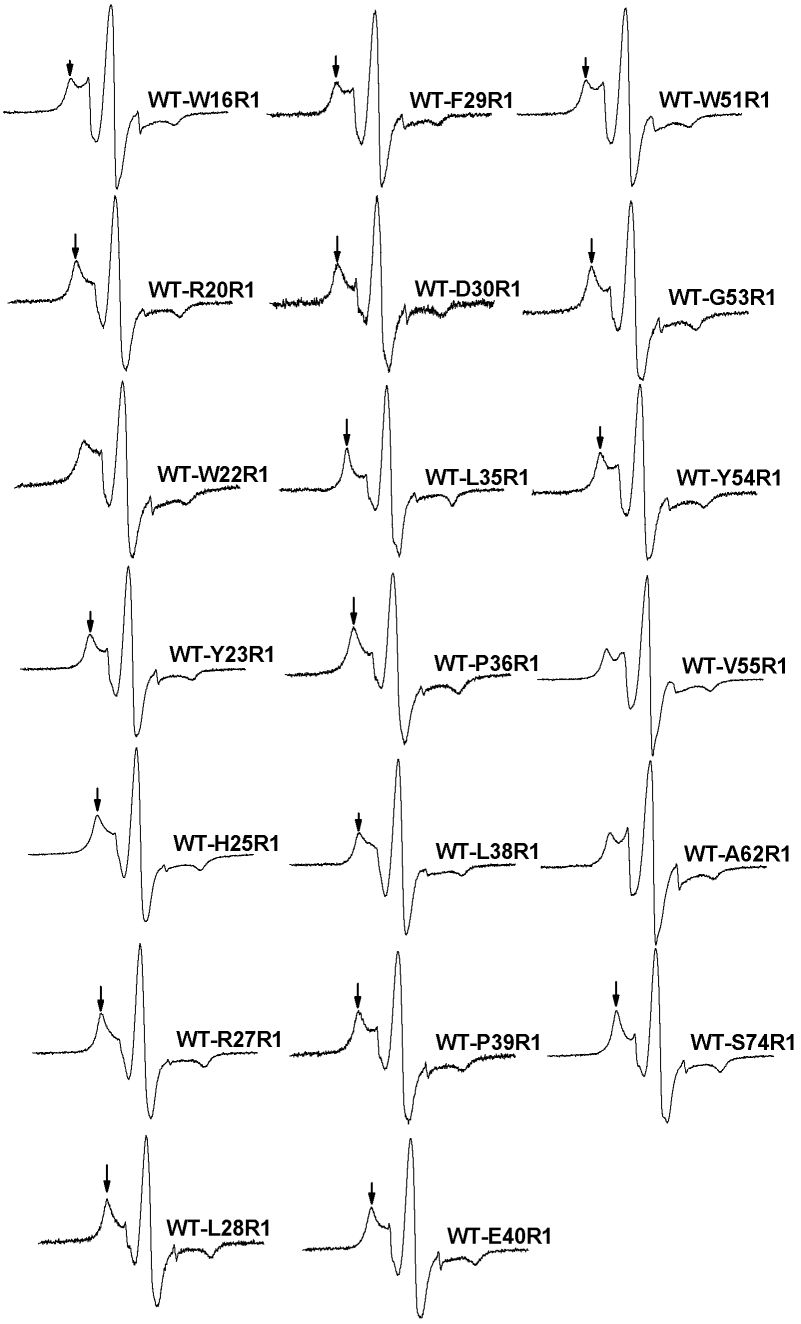
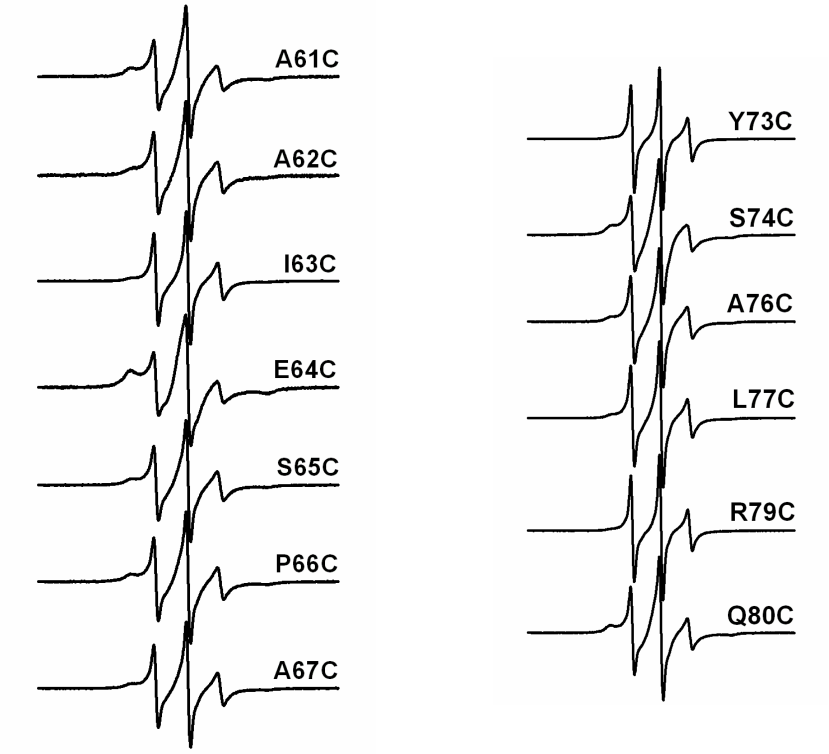
Supporting Information

Figure S1.



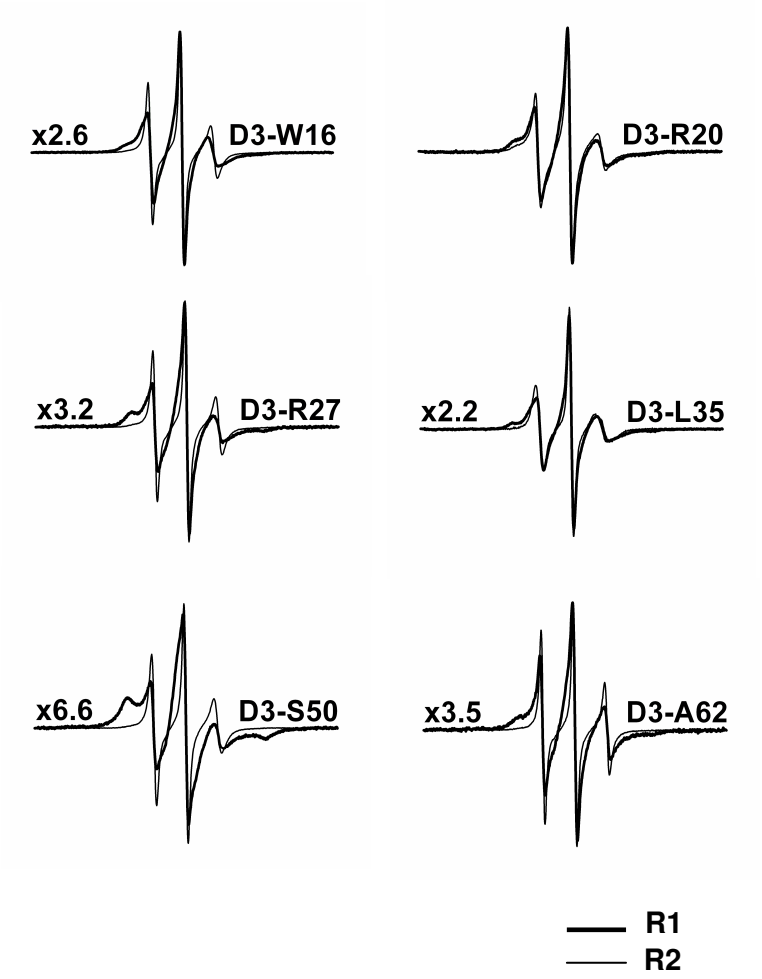
Representative EPR spectra of R1-labeled residues in the wild-type background. Arrows indicate the motionally restricted components. All spectra were acquired at 50 μM concentration and 150 G scan width.

Figure S2.



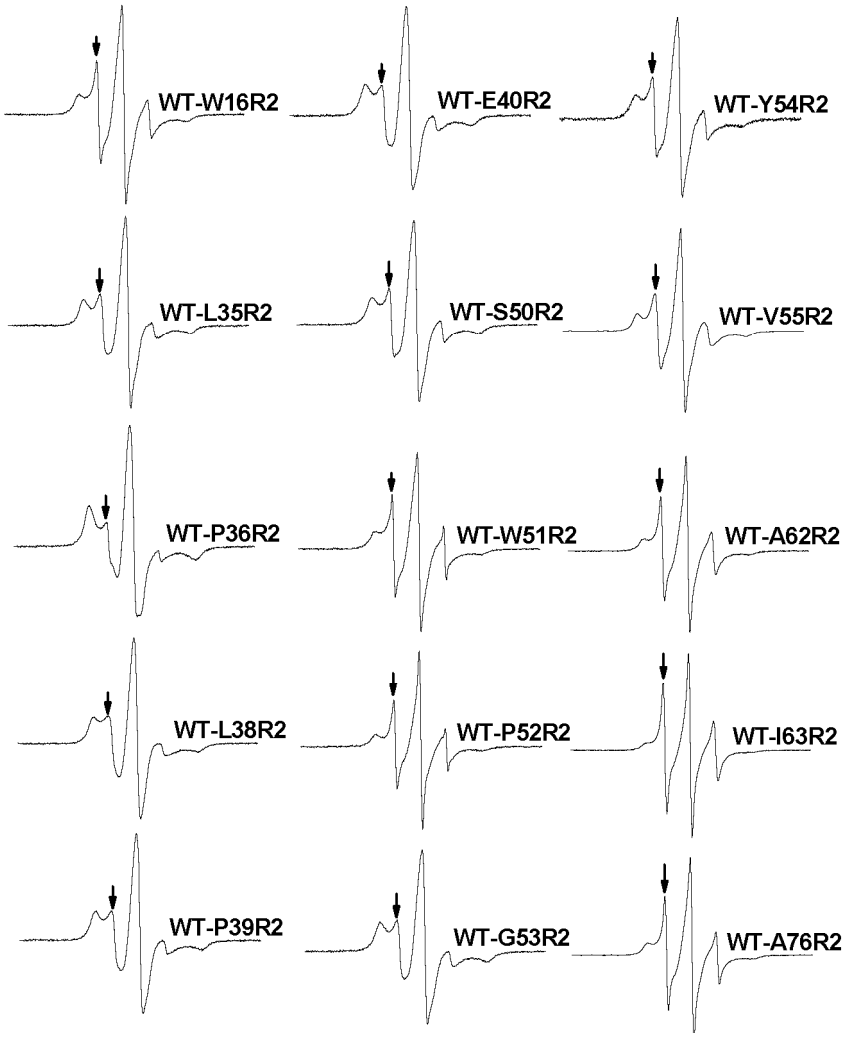
EPR spectra of R1-labeled residues 61 to 67 and 73 to 80. All spectra were acquired at 50 μM concentration and 150 G scan width.

Figure S3.



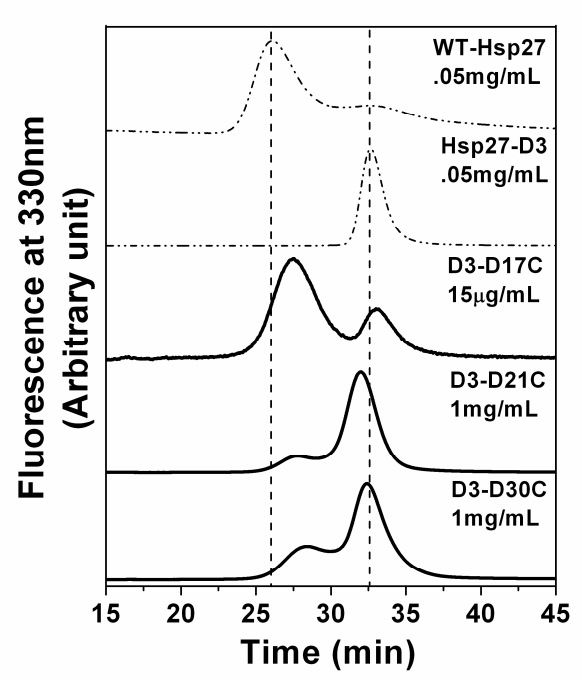
Representative EPR spectra of R1- and R2-labeled Hsp27-D3 mutants. The bold traces correspond to R1-labeled mutants and the light traces to R2-labeled mutants. R1-labeled mutants were scaled by the factor to the left of the spectrum. All spectra were acquired at 50 μM concentration at 150 G scan width.

Figure S4



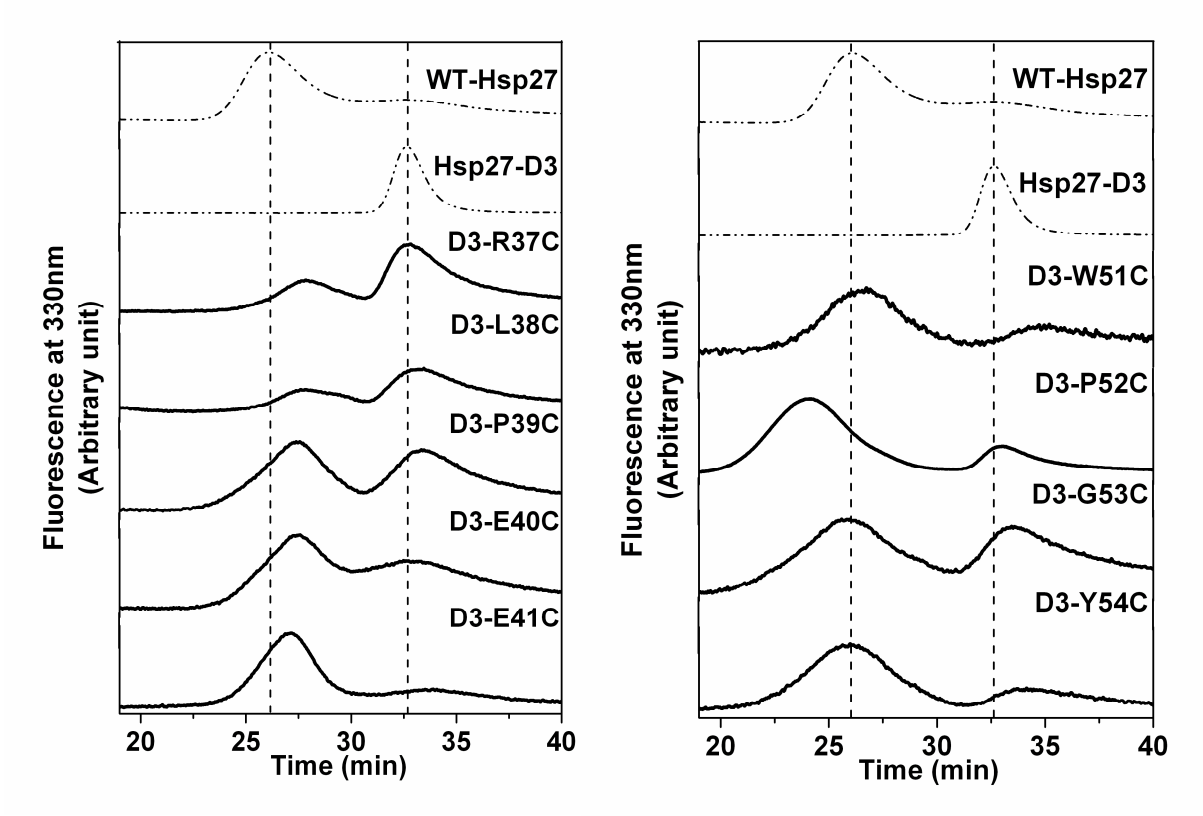
Representative EPR spectra of R2-labeled residues on the WT background. Arrows indicate the mobile component. All spectra were acquired at 50 μM concentration and 150 G scan width.

Figure S5.



SEC chromatograms of D3-D17C, D3-D21C, and D3-D30C. All three traces were generated at 23^{o}C, pH 7.2 with a flow rate of 0.5 mL/min.

Figure S6.



SEC chromatograms for residues that shift the dissociation equilibrium in favor of large assemblies. The protein concentration was 0.05 mg/ml and experiments were performed at 23^{o}C, pH 7.2 with a flow rate of 0.5 mL/min.