

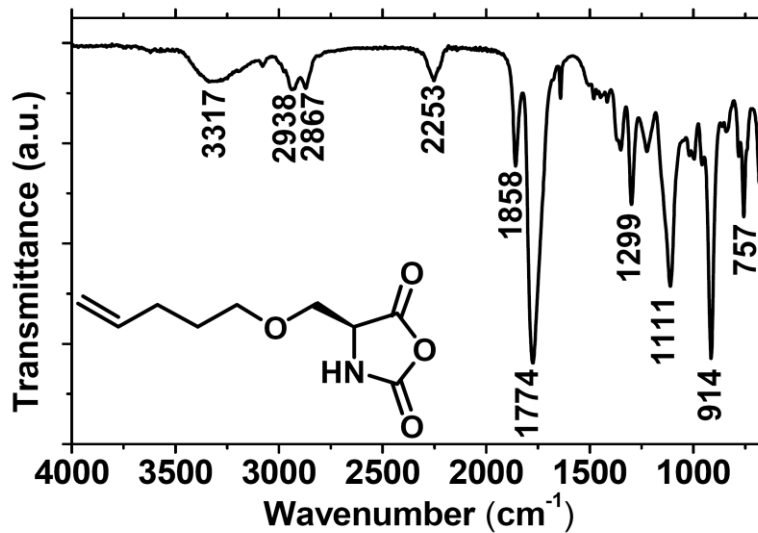
Supporting Information

**Water-Soluble Poly(L-serine)s with Elongated and Charged Side-Chains: Synthesis,  
Conformations and Cell-Penetrating Properties**

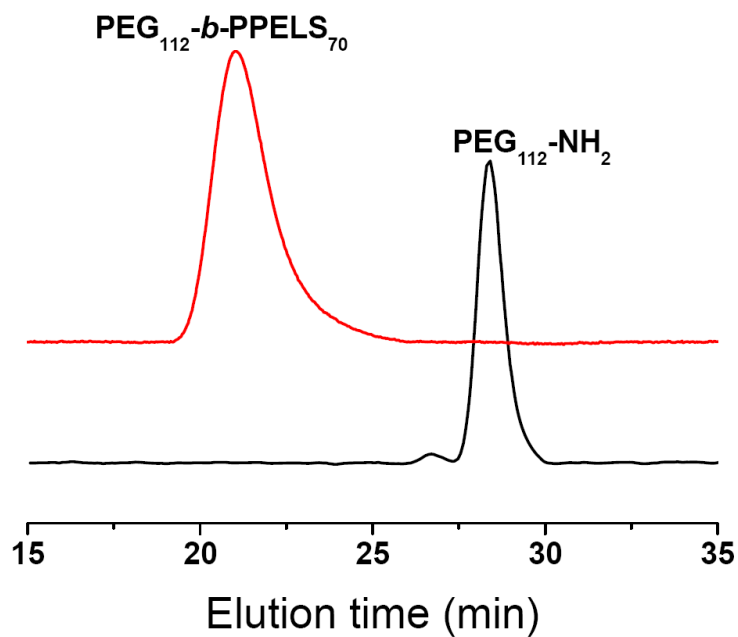
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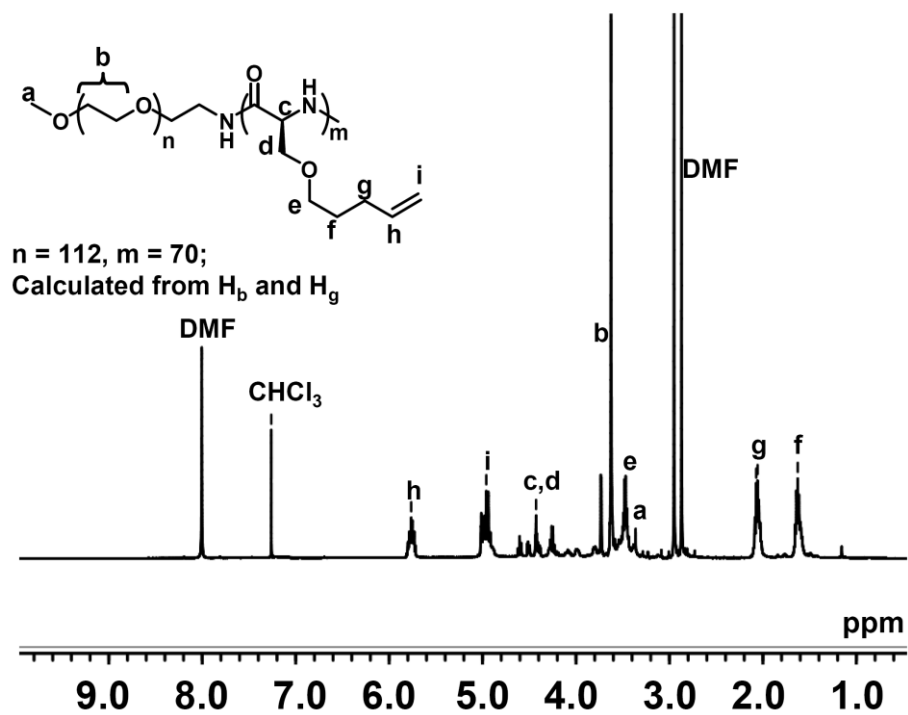
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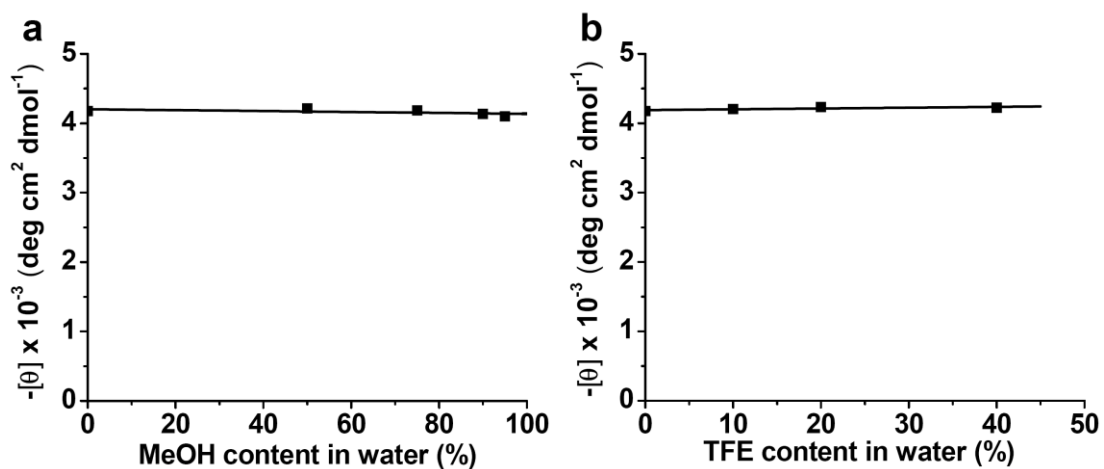
**Figure S1.** FTIR spectrum of *O*-pentenyl-L-serine-based *N*-carboxyanhydride (PE-L-Ser NCA, 4).



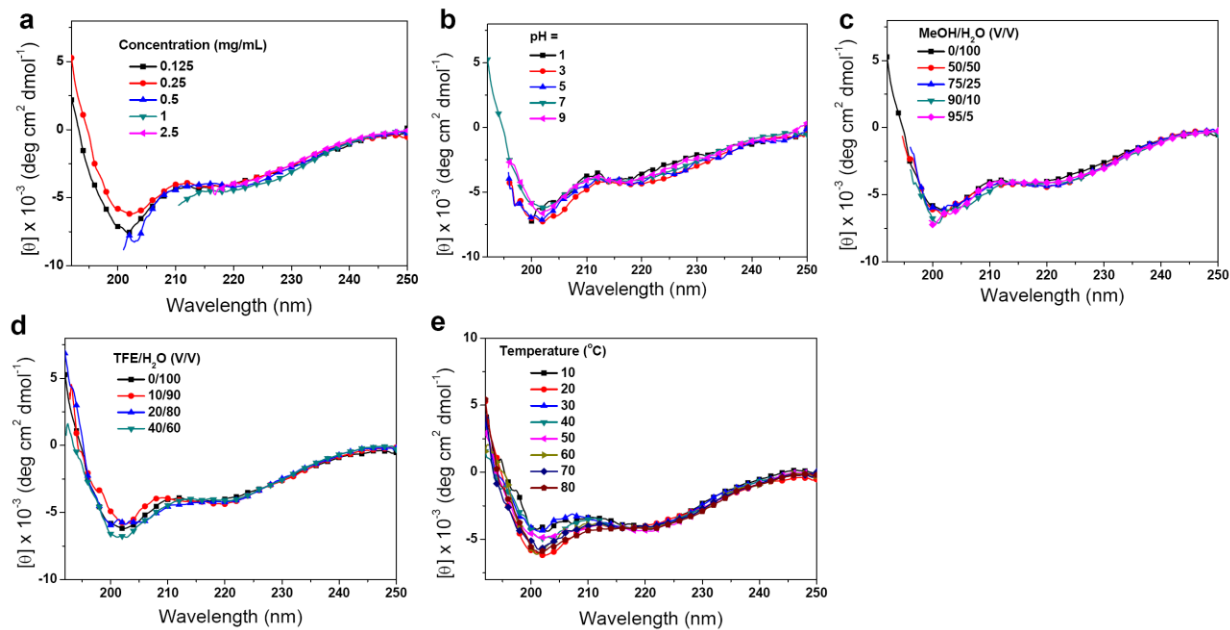
**Figure S2.** SEC traces (light scattering response) of PEG<sub>112</sub>-NH<sub>2</sub> and PEG<sub>112</sub>-*b*-PPELS<sub>70</sub>.



**Figure S3.** <sup>1</sup>H NMR spectrum of PEG<sub>112</sub>-b-PPELS<sub>70</sub> (5) in CDCl<sub>3</sub>.



**Figure S4.** MeOH (a) and TFE (b) concentration dependence (relative to water) of the molar ellipticity at 216 nm for PEG<sub>112</sub>-b-(PPELS<sub>70</sub>-g-CA).



**Figure S5.** CD spectra of PEG<sub>112</sub>-*b*-(PPELS<sub>70</sub>-*g*-CA) in aqueous solutions against changes in (a) polymer concentration, (b) pH, (c) MeOH concentration, (d) TFE concentration, and (e) temperature.