Supporting Information for

Strategies to Increase the Thermal Stability of Truly Biomimetic Hydrogels: Combining Hydrophobicity and Directed Hydrogen Bonding

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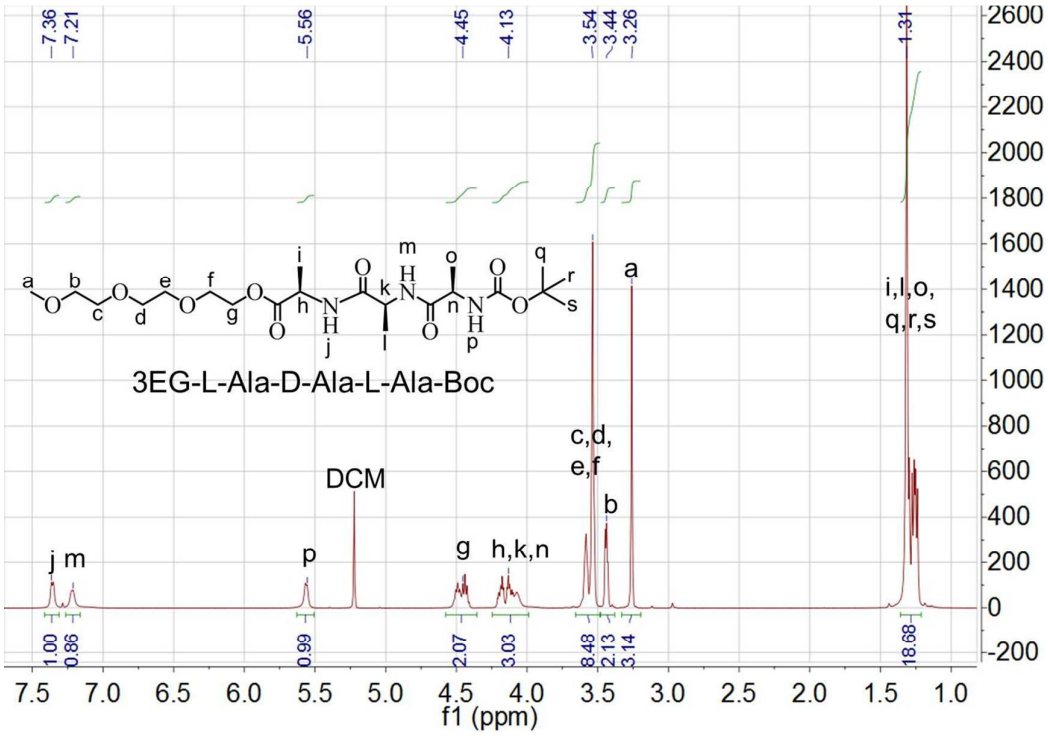

Figure S1. [1]H NMR spectra of 3EG-L-Ala-D-Ala-L-Ala-Boc.

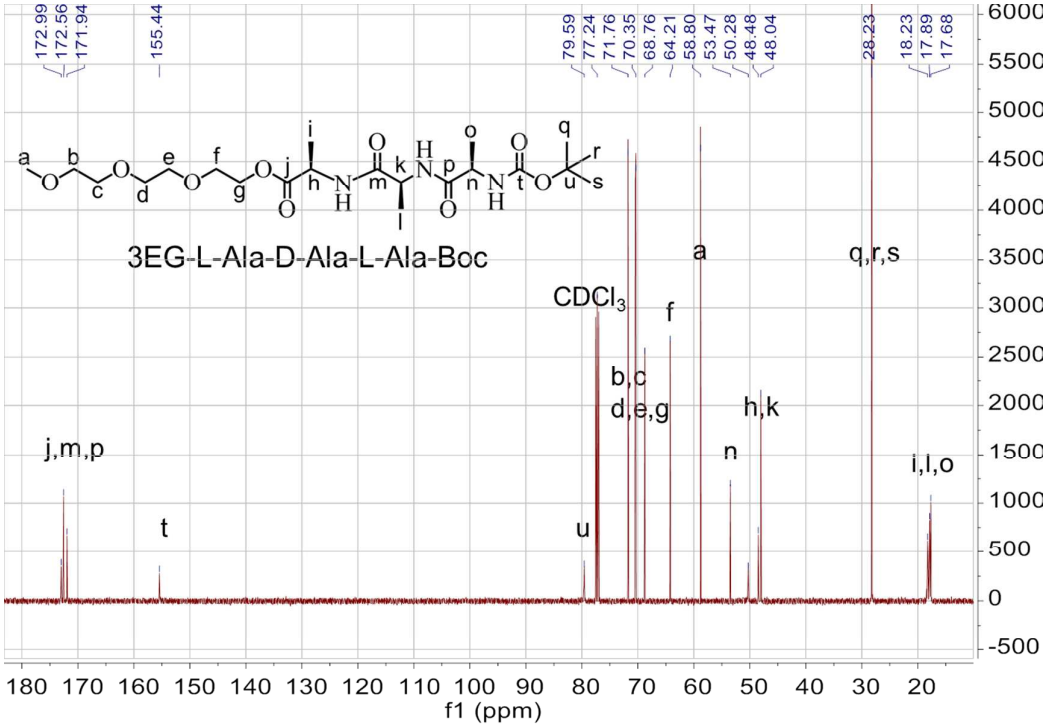

Figure S2. [13]C NMR spectra of 3EG-L-Ala-D-Ala-L-Ala-Boc.

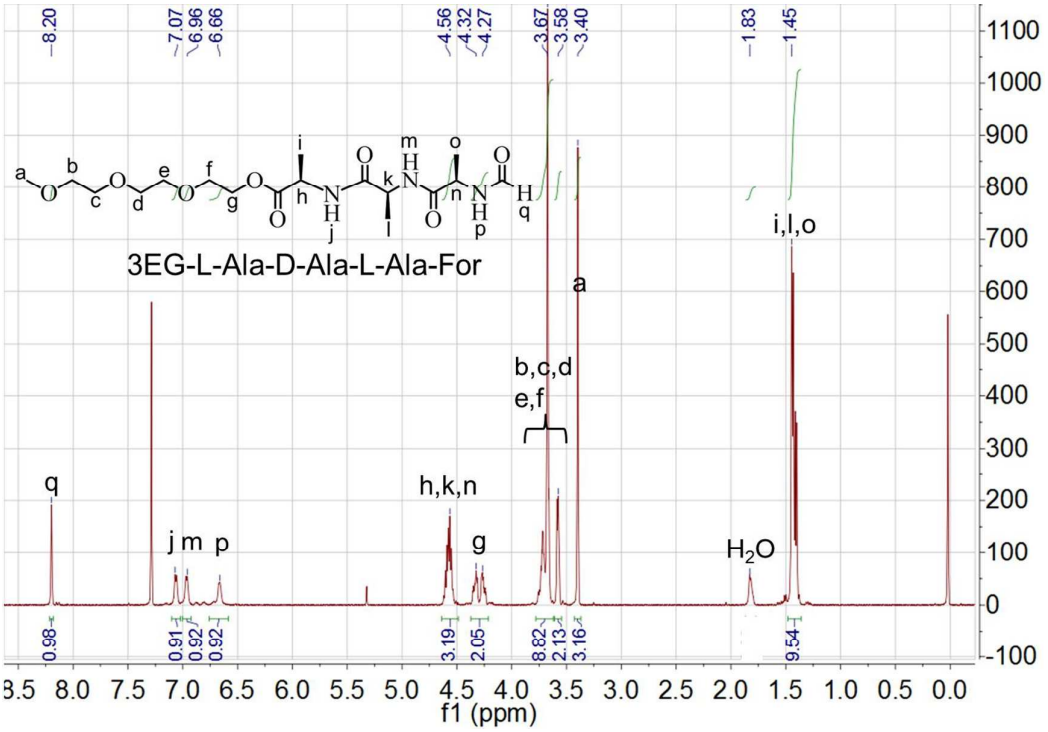

Figure S3. [1]H NMR spectra of 3EG-L-Ala-D-Ala-L-Ala-For.

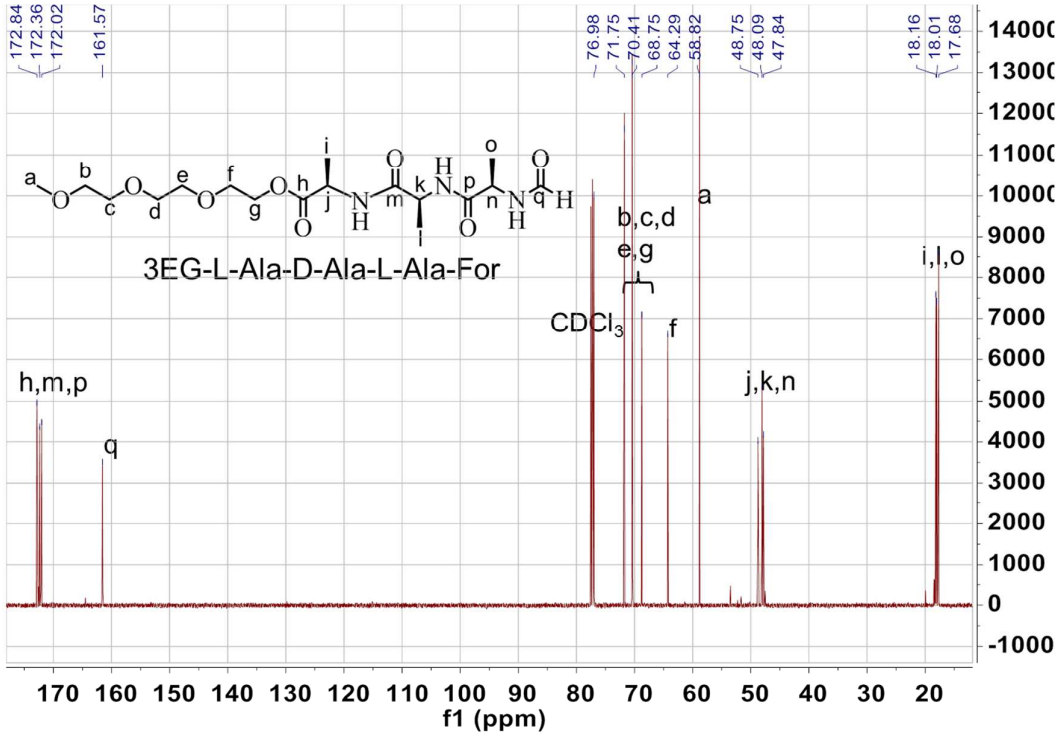

Figure S4. [13]C NMR spectra of 3EG-L-Ala-D-Ala-L-Ala-For.

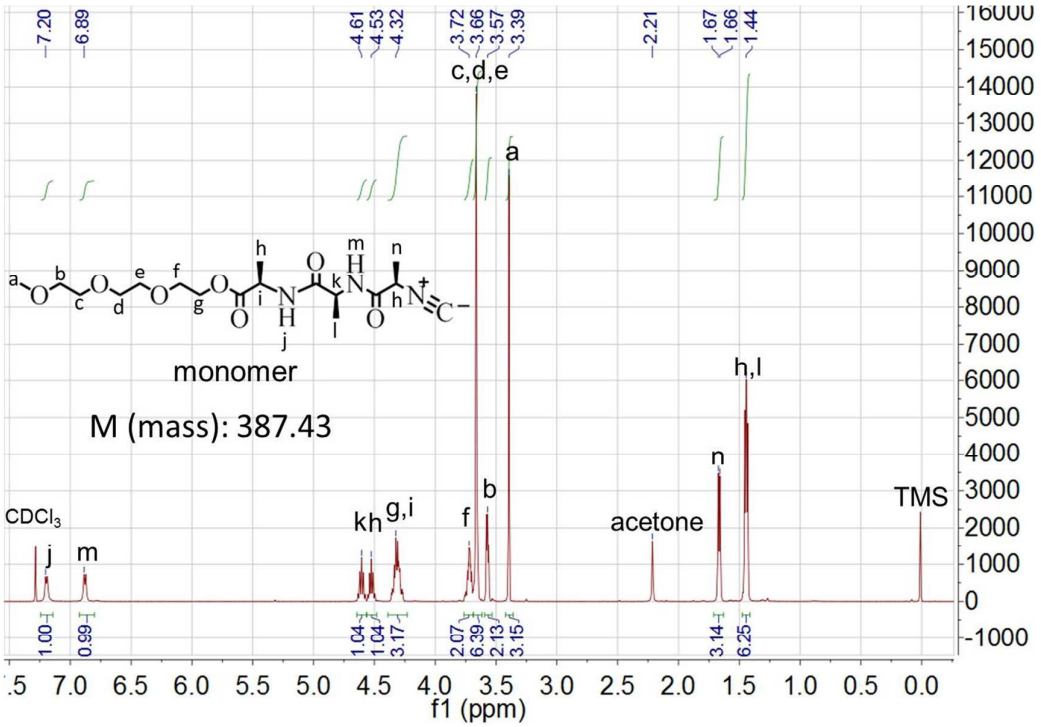

Figure S5. ^{1}H NMR spectra of the monomer.

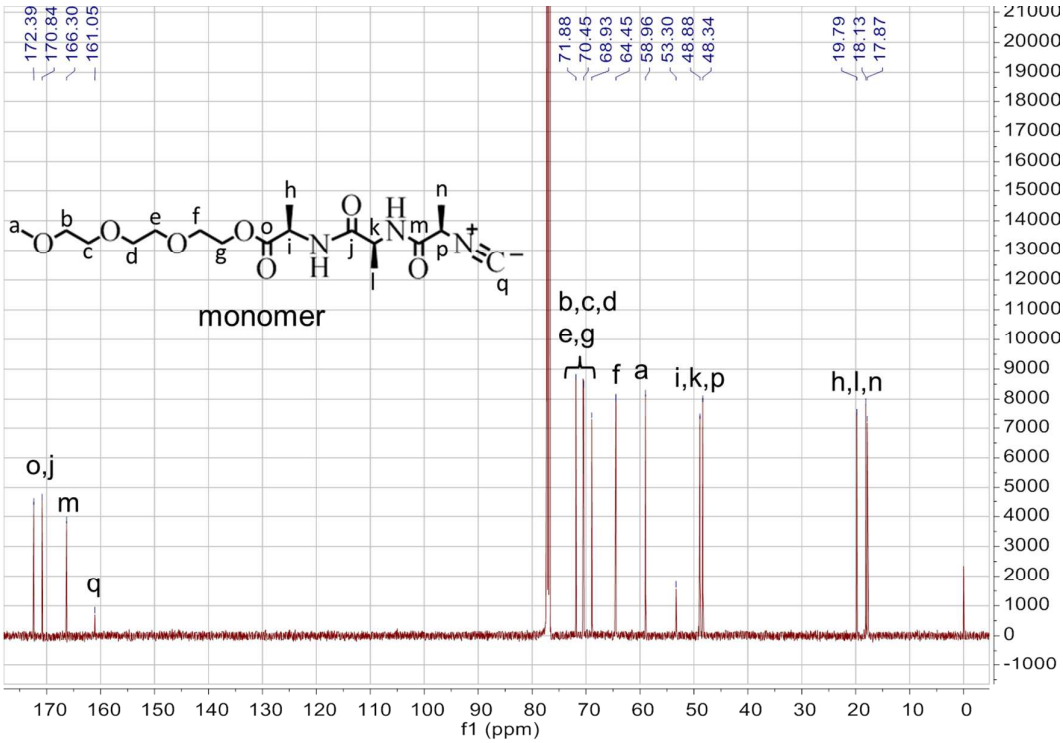

Figure S6. ^{13}C NMR spectra of the monomer.

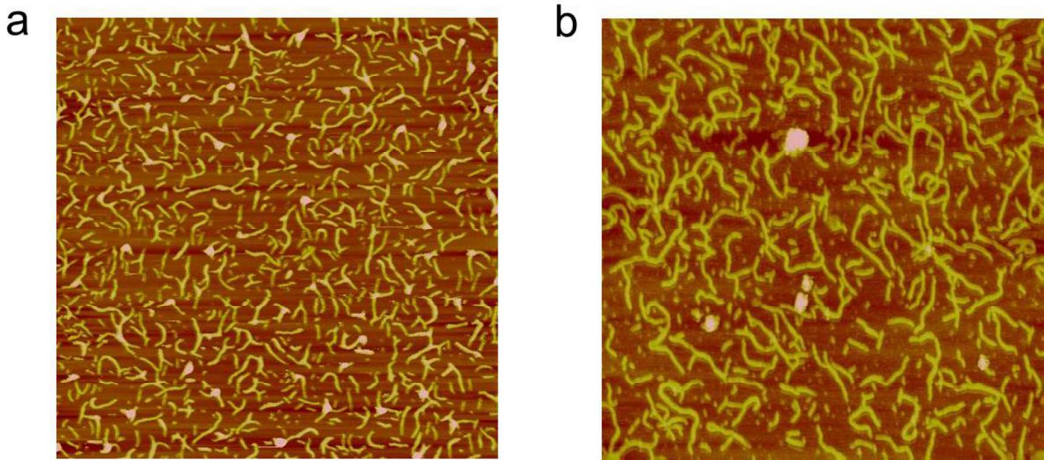

Figure S7. The representative AFM images of polymer TriPIC-a (a) and TriPIC-f (b).

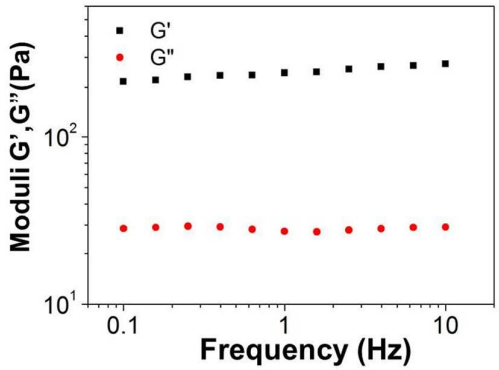

Figure S8. Frequency sweeps of TriPIC-f gel (2.0 g L^{-1}) in the linear viscoelastic regime at 80 °C.

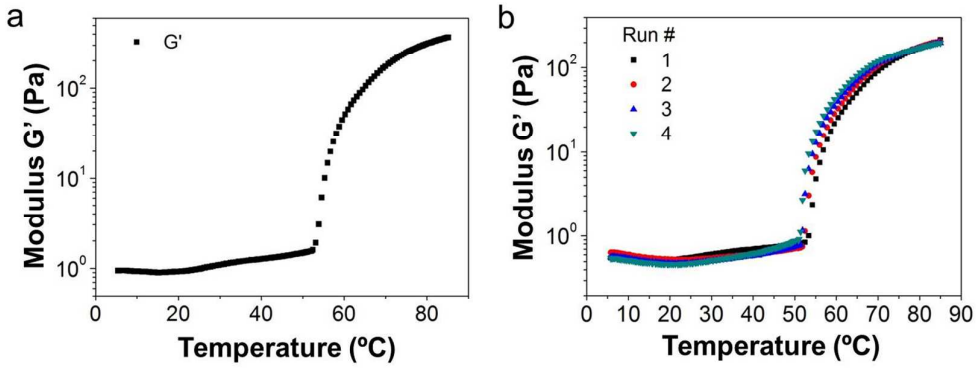

Figure S9. (a) Modulus *G'* of TriPIC-f as a function of temperature after the 10 h time sweep performed at 80 °C. (b) Storage modulus *G'* of TriPIC-f as a function of temperature for 4 sequential heating and cooling runs, c= 2.0 g L^{-1}.

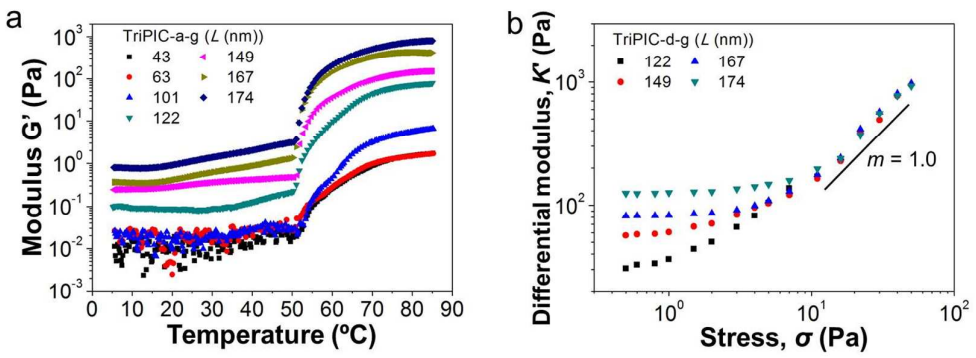

Figure S10. (a) Temperature ramps of the storage modulus *G'* for different length (*L*) polymers. (b) Differential modulus *K'* against stress for different length (*L*) polymers at 60 ºC, $c = 2.0$ g L^{-1}.

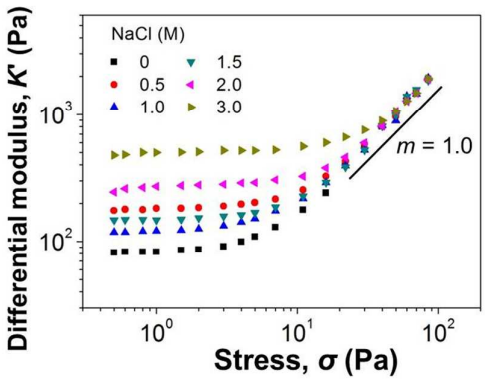

Figure S11. The differential modulus *K'* as a function of the applied stress for TriPIC-f with different concentrations of NaCl at 60 °C.

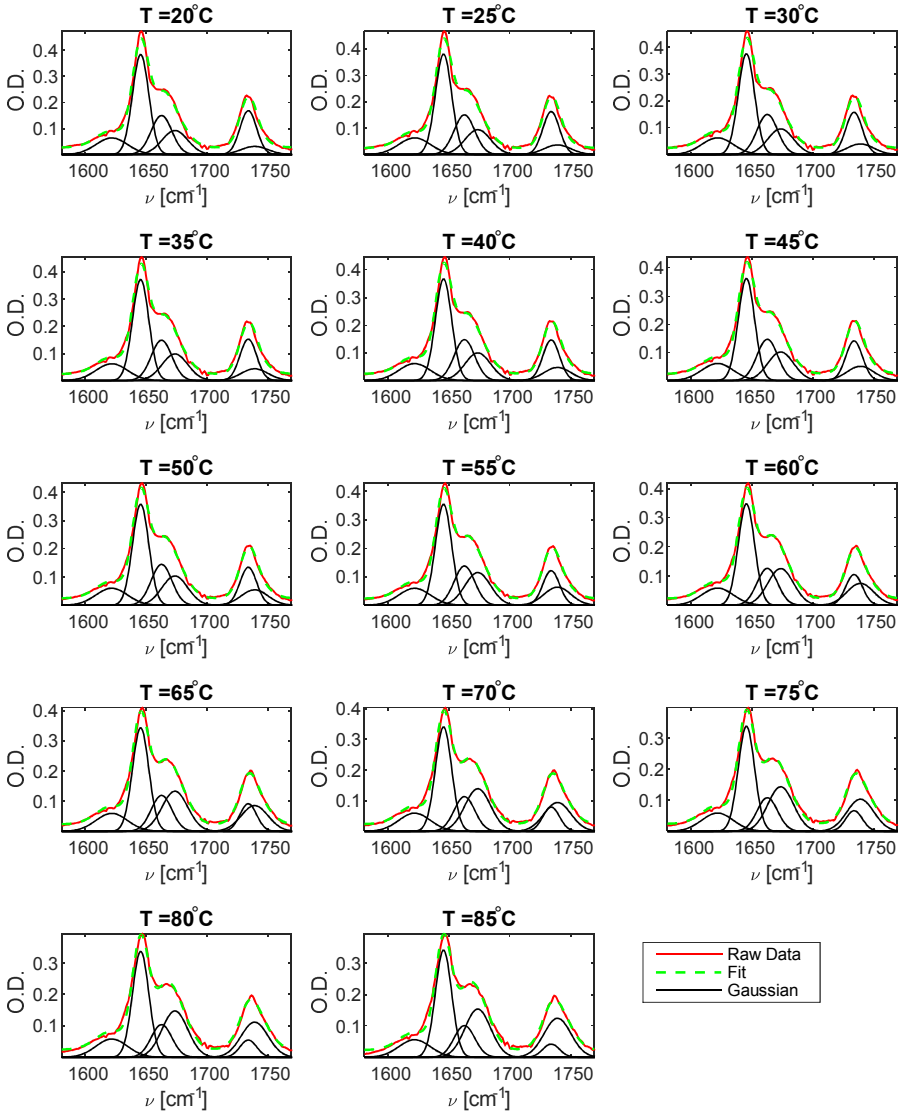

Figure S12. The best-fitted FTIR spectra and the deconvoluted components with 6 Gaussian-curves at 1622, 1646, 1661, 1674, 1734 and 1739 cm^{-1} in the 1550–1780 cm^{-1} region for TriPIC polymers at each temperature.

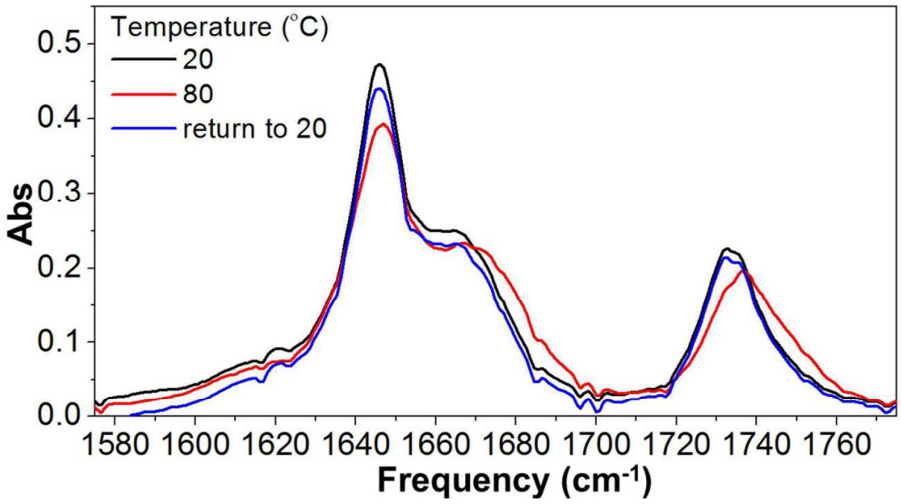

Figure S13. FTIR spectra of the TriPIC polymer (17.0 g L^{-1} in D_2O) in the amide I and ester regions at 20 ºC cooling down from 80 ºC.

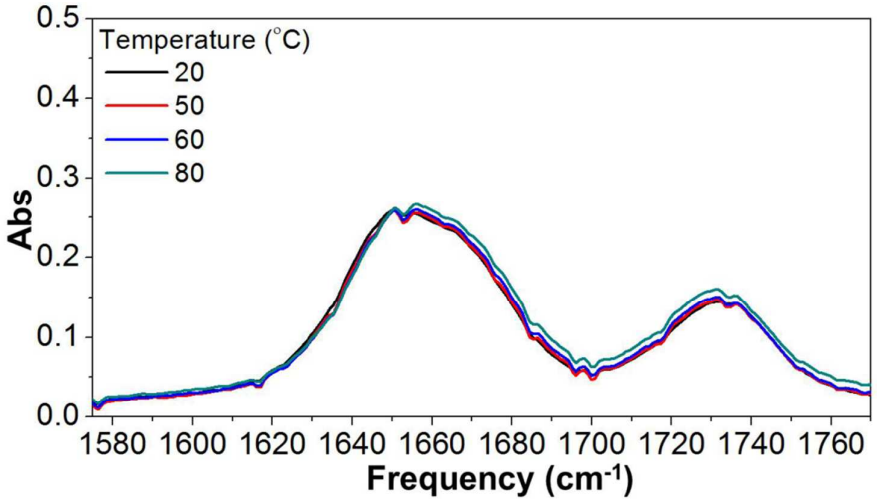

Figure S14. FTIR spectra of the TriPIC monomer (17.0 g L^{-1} in D_2O) in the amide I and ester regions as a function of temperature.

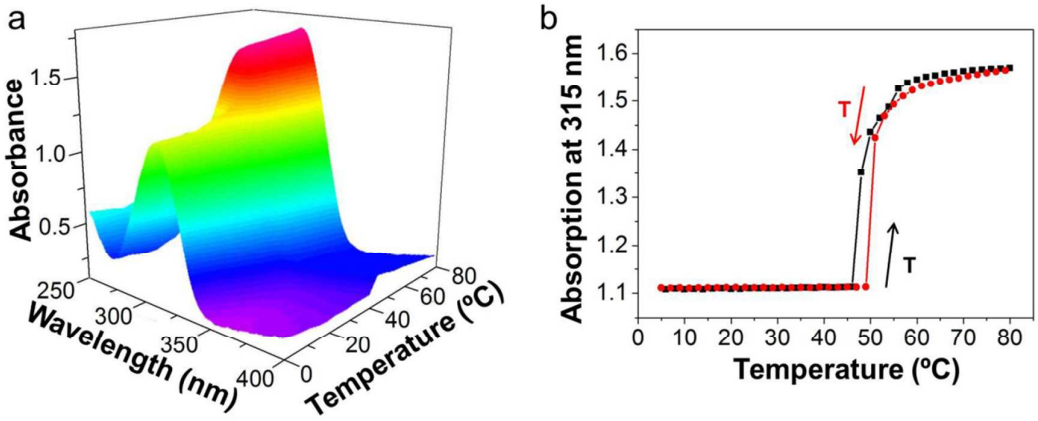

Figure S15. (a) UV-vis spectra of TriPIC as a function of temperature. (d) Evaluation of the absorption signal at λ= 315 nm of TriPIC with temperature. Measurements were performed in water, c = 0.5 g L^{-1}.