Supplementary Information

LCST- and UCST-type thermoresponsive behavior in dendronized gelatins

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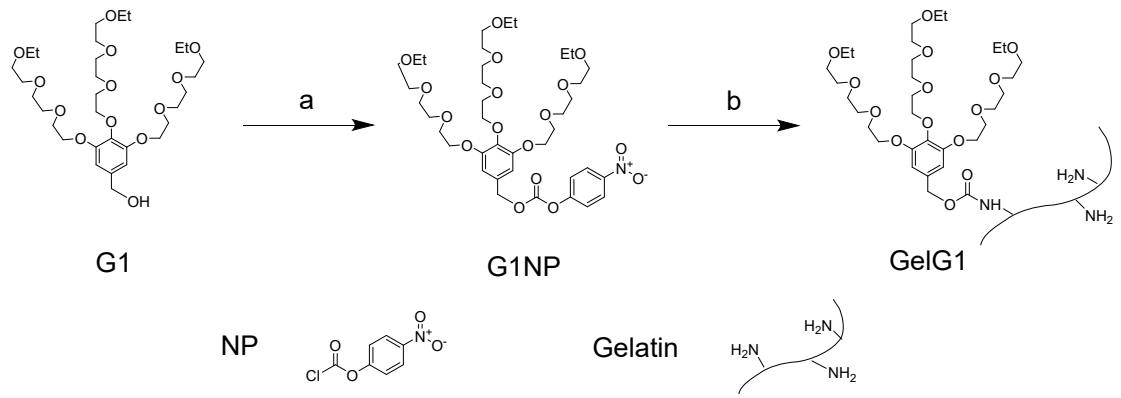

Scheme S1. Synthesis of **GelG1**. (a) NP, TEA, DMAP, DCM (dry), 0 to 25 ^{o}C, 12 h; (b) Gelatin, DIPEA, Acetone, 0 ^{o}C, 24 h.

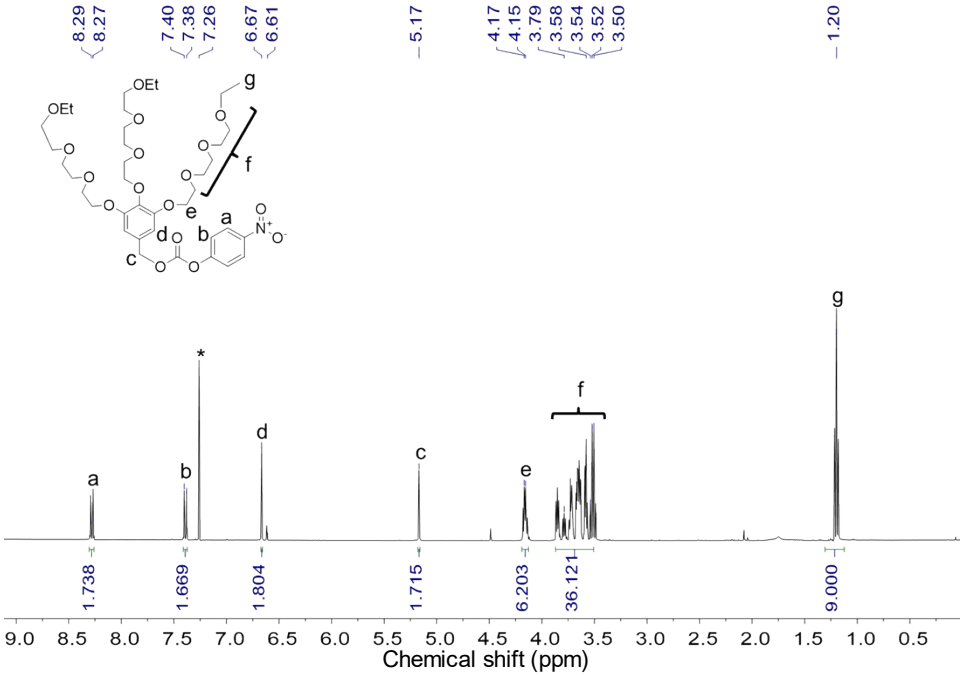

Fig. S1 ^{1}H NMR spectrum of **G1NP** in $CDCl_3$. The solvent peak is marked with asterisk (*).

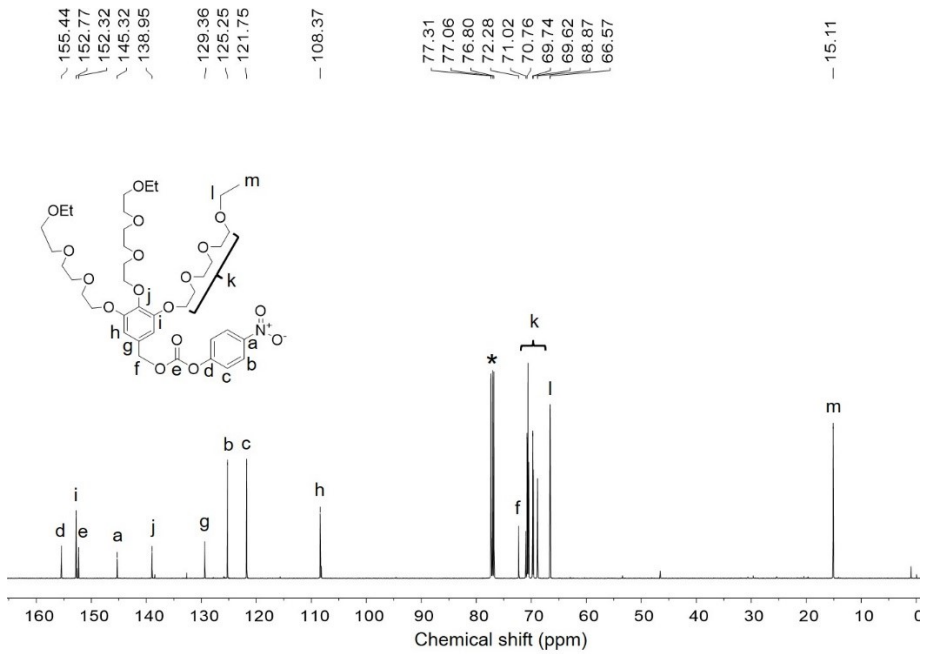

Fig. S2 ^{13}C NMR spectrum of **G1NP in $CDCl_3$**. The solvent peak is marked with asterisk (*).

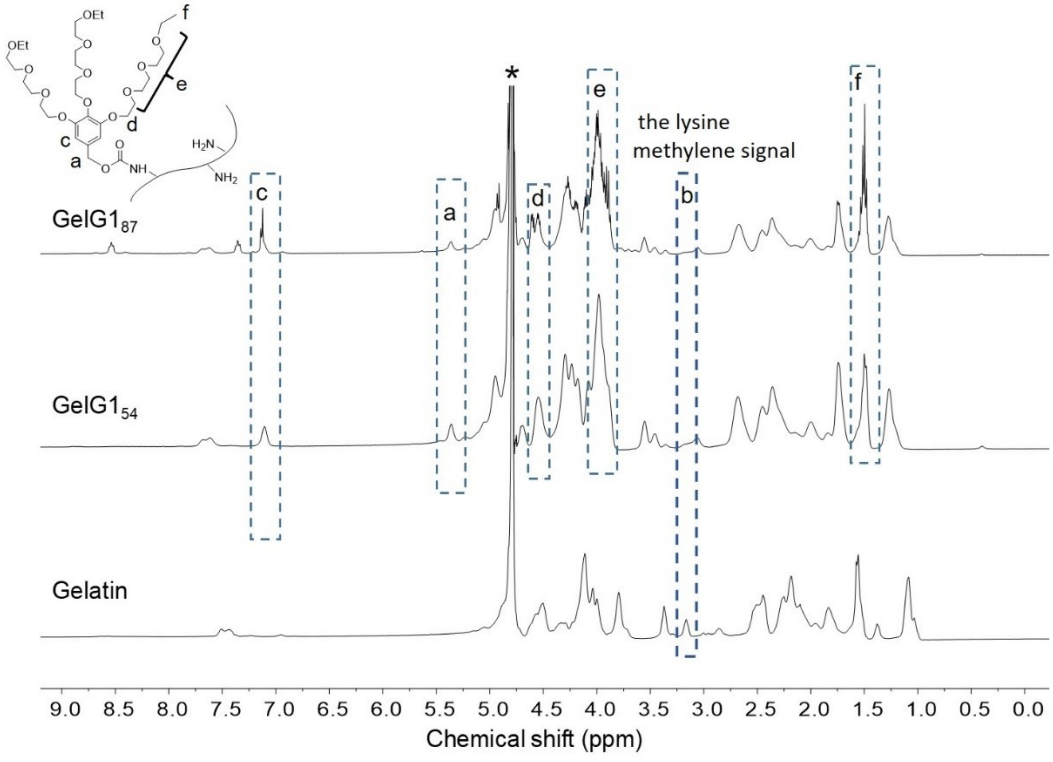

Fig. S3 Assembled ^{1}H NMR spectra of **$GelG1_{54}$, $GelG1_{87}$** and Gelatin in D_2O.

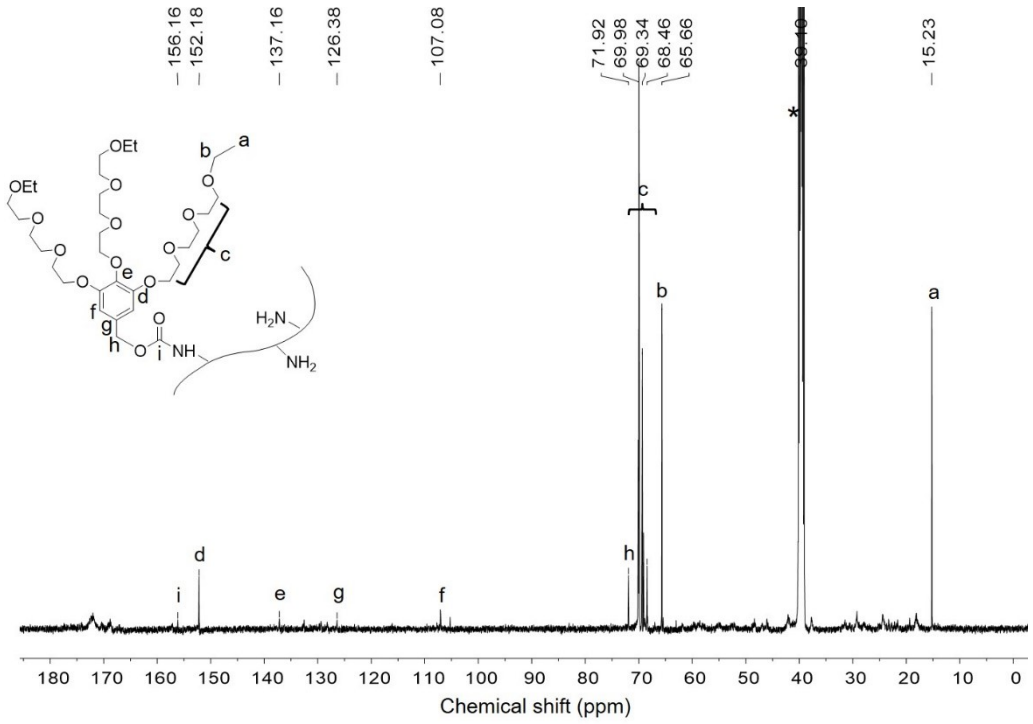

Fig. S4 ^{13}C NMR spectrum of **GelG1$_{54}$** in DMSO-d_6. The solvent peak is marked with asterisk (*).

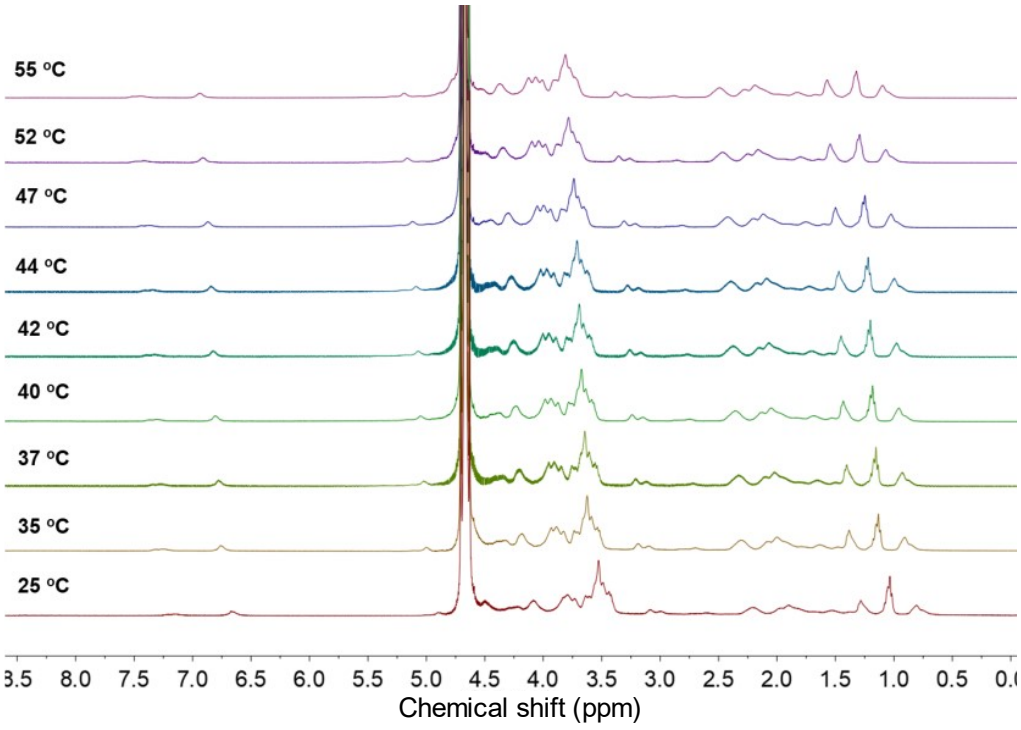

Fig. S5 Temperature-dependent ^{1}H NMR spectra of **GelG1$_{54}$** (1.0 wt %) in D_2O.

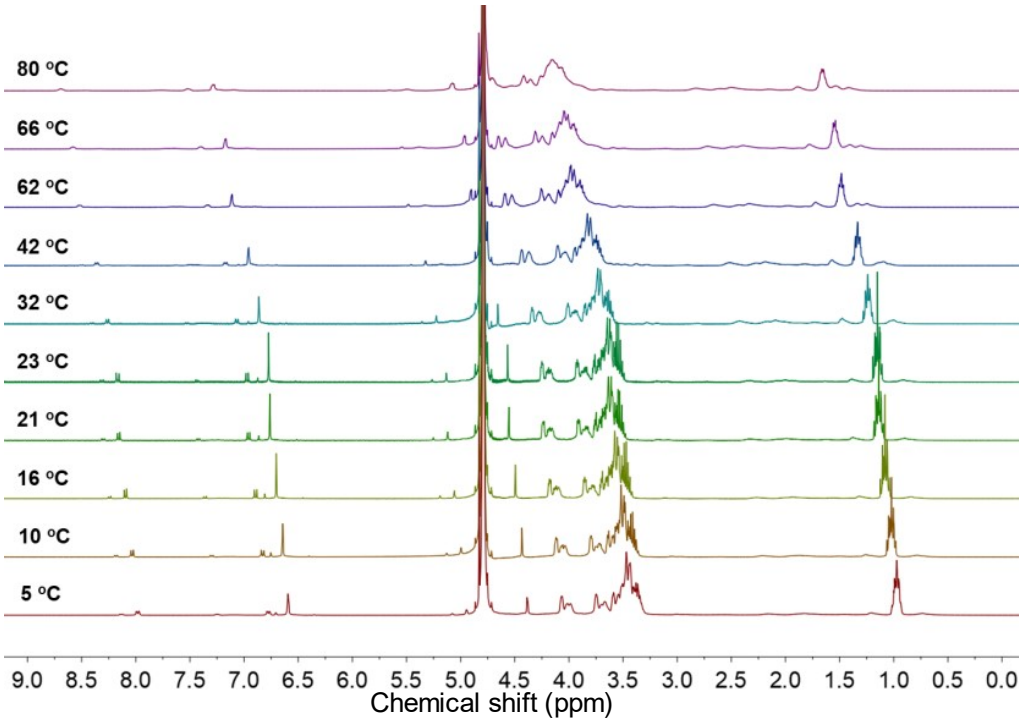

Fig. S6 Temperature-dependent ^{1}H NMR spectra of **GelG1$_{87}$** (1.0 wt %) in D_2O.

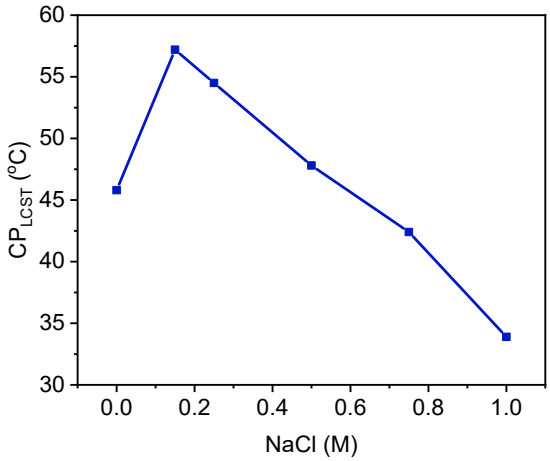

Fig. S7 The CP_{LCST} of **GelG1$_{54}$** (0.5 wt %) in water with different amount of NaCl.

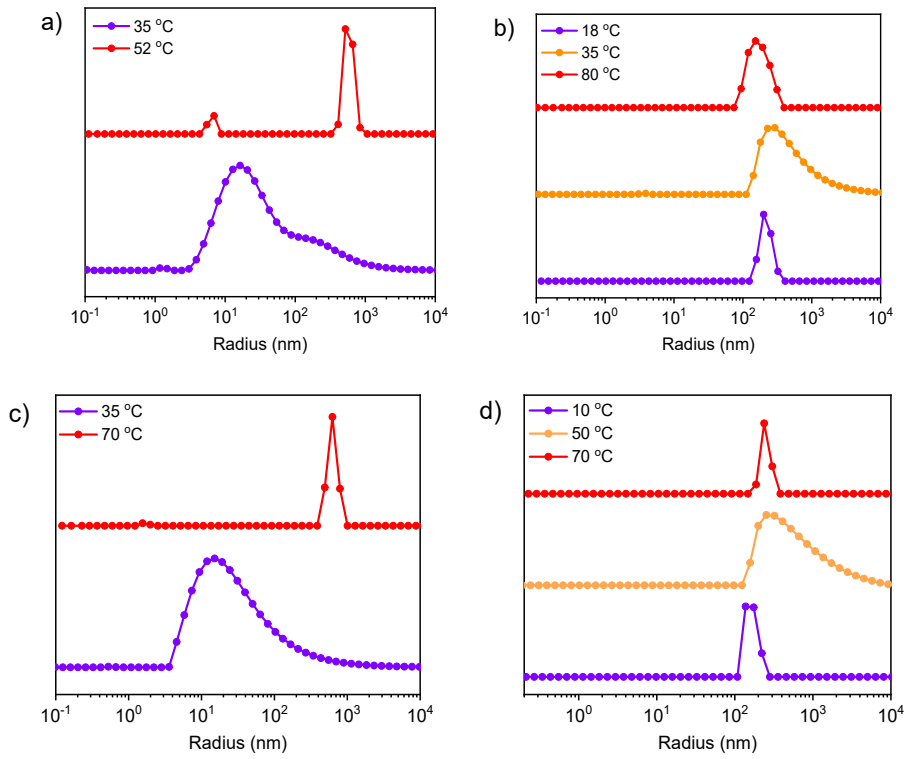

Fig. S8 The size distribution of **GelG1$_{54}$** (a) and **GelG1$_{87}$** (b) in deionized water, and **GelG1$_{54}$** (c) and **GelG1$_{87}$** (d) in deionized water containing 150 mM NaCl by dynamic light scattering. (C = 0.3 wt%).

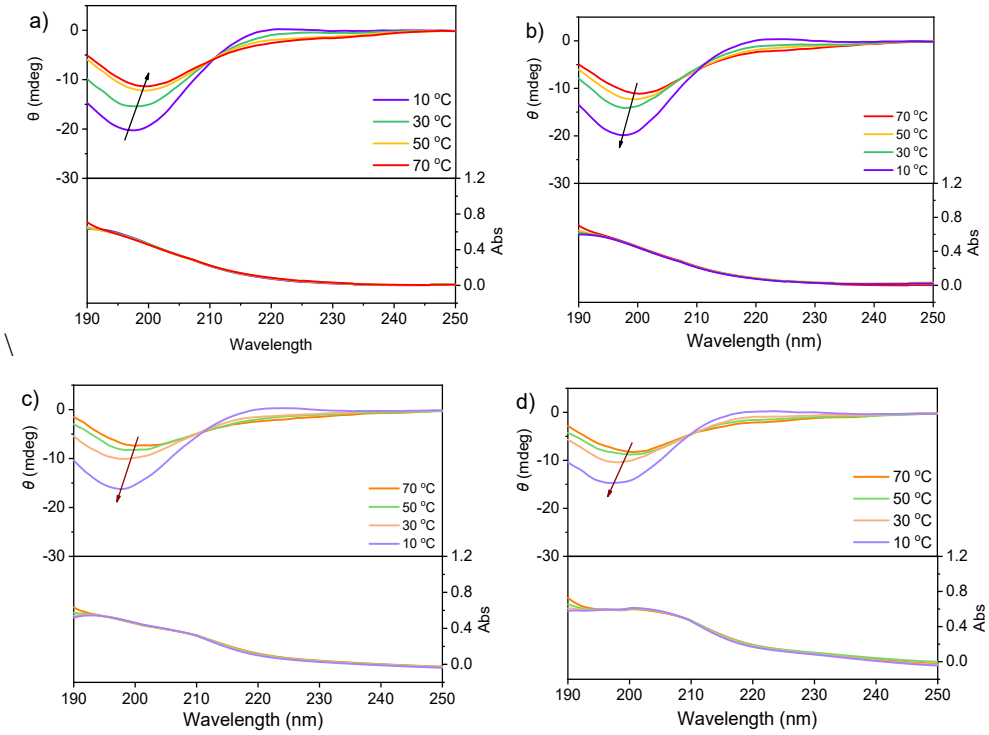

Fig. S9 UV-Vis and CD spectra of gelatin and dendronized gelatin in aqueous solution (0.1 mg·mL^{-1}) at various temperatures: (a) gelatin, heating, (b) gelatin, cooling, (c) **GelG1$_{54}$**, cooling, (d) **GelG1$_{87}$**, cooling.