Electronic Supplementary Material (ESI) for Nanoscale

Supporting Information for:

Modeling and Self-assembly Behavior of PEG-PLA-PEG Triblock Copolymers in Aqueous Solution

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EXPERIMENTAL

Measurements: ^{1}H-NMR spectra were recorded at room temperature with a Bruker spectrometer operating at 300 MHz by using CDCl3 as solvent. The relaxation delay used for ^{1}H-NMR spectra was 800 msec, and chemical shifts (δ) were given in ppm using tetramethylsilane as an internal reference.

Diffusion ordered spectroscopy (DOSY) measurements were performed at 300 K on a Bruker Avance AQS600 NMR spectrometer operating at 600 MHz and equipped with a Bruker multinuclear z-gradient inverse probe head capable of producing gradients in the z direction with strength 55 Gcm-1. All spectra were recorded with 32 K time domain data points in the t2 dimension and 32 t1 increments. The gradient strength was logarithmically incremented in 32 steps from 2% up to 95% of the maximum gradient strength. All measurements were performed with a compromise diffusion delay D of 200 ms in order to keep the relaxation contribution to the signal attenuation constant for all samples. The gradient pulse length d was 5 ms in order to ensure full signal attenuation. Dimethylsulfoxide (DMSO) was used as solvent and the DOSY maps were obtained with the Bruker topspin software.

Fourier transform infrared spectroscopy (FTIR) spectra were recorded using a Perkin Elmer Spectrum 100 FTIR spectrometer using the attenuated-total-reflectance method.

GPC measurements were performed at room temperature using a Viscotek GPCmax system equipped with a Viscotek guard column (10×4.6 mm) and two Viscotek columns LT 5000L mixed medium (300×7.8 mm), with a Viscotek VE 3580 refractometric detector, and a Viscotek VE 3210 UV/Vis detector. THF was used as the mobile phase at a flow rate of 1.0 mL/min. All the solutions were prepared at a concentration of 10 g/L and filtered through 0.22 µm Millipore filter. 20µL of solution were injected for each analysis. Calibration was accomplished with polystyrene standards (Polysciences, Warrington, PA).

Gel permeation chromatography (GPC) measurements were performed on a Waters 410 apparatus equipped with an RI detector. THF was used as the mobile phase at a flow rate of 1.0 mL/min. All the solutions were prepared at a concentration of 10 g/L and filtered through 0.22 □m Millipore filters. 20□l of solution were injected for each analysis. Calibration was accomplished with polystyrene standards (Polysciences, Warrington, PA).

Figure S1. ^{1}H-NMR spectra in $CDCl_3$ of A) PEG-PLA diblock and B) PEG-PLA-PEG triblock copolymer in T1 synthesis.

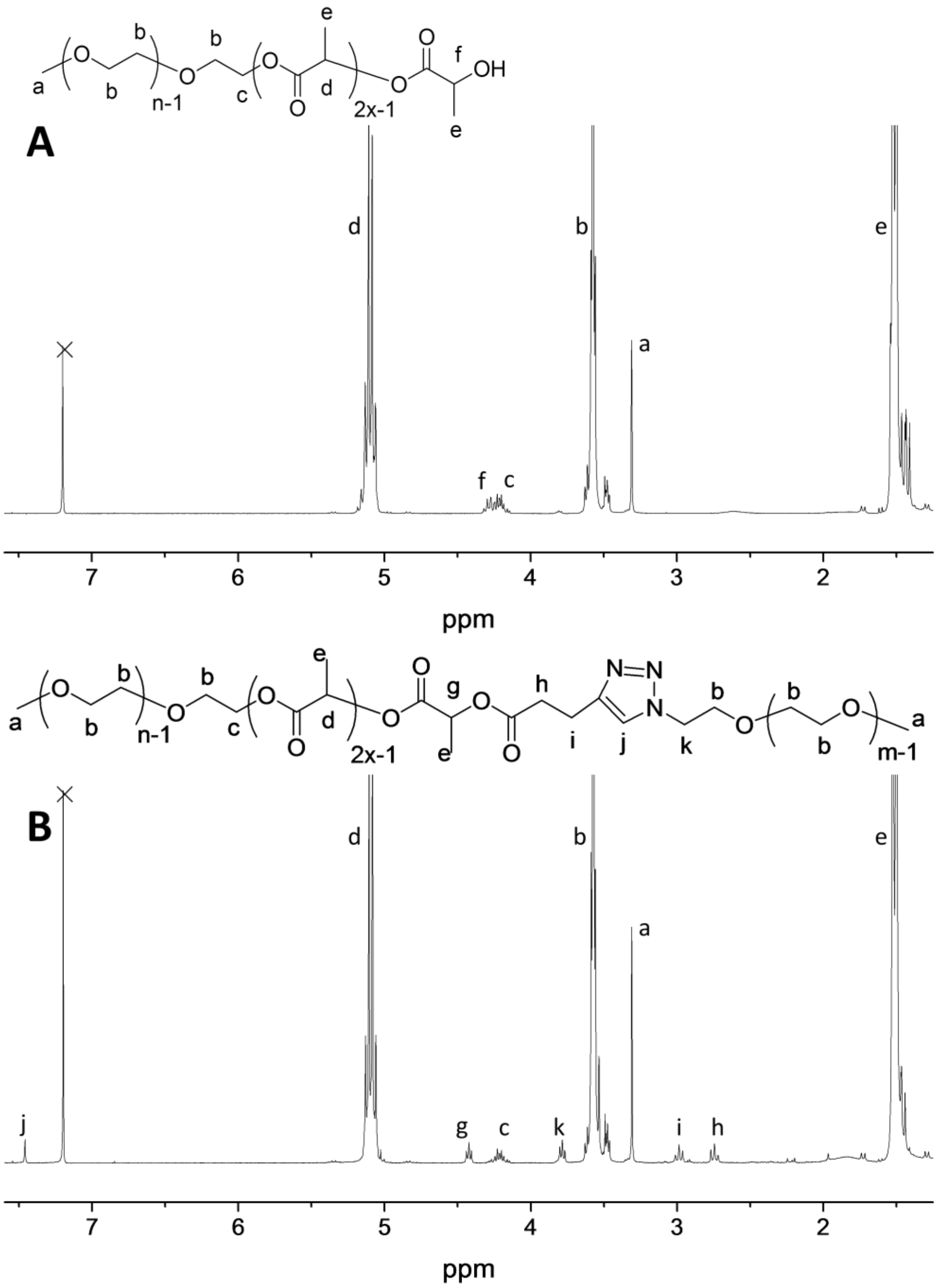

Figure S2. DOSY NMR spectra in DMSO of A) PEG homopolymers and B) PEG-PLA-PEG triblock copolymer in T1 synthesis.

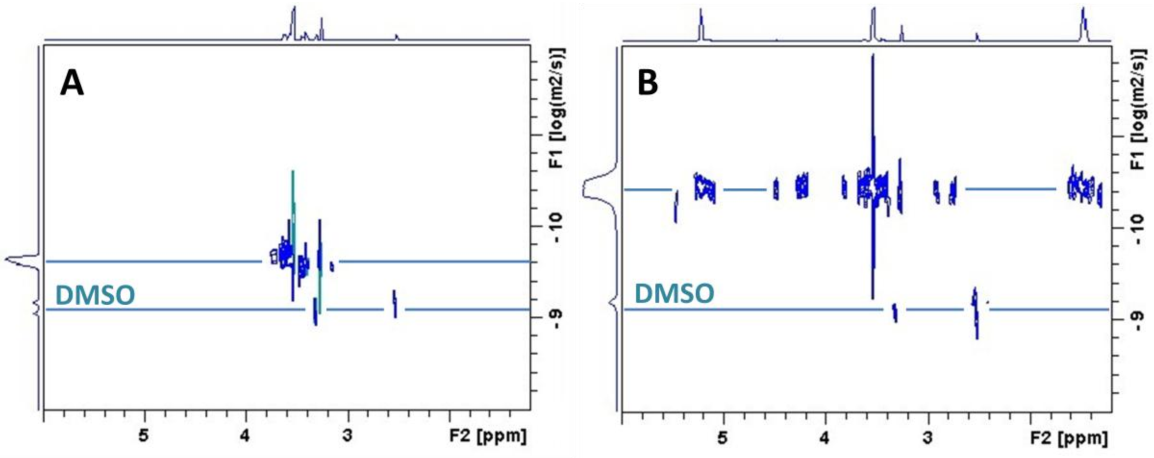

Figure S3. FTIR spectra of A) monoazide PEG and B) PEG-PLA-PEG triblock copolymer in T1 synthesis.

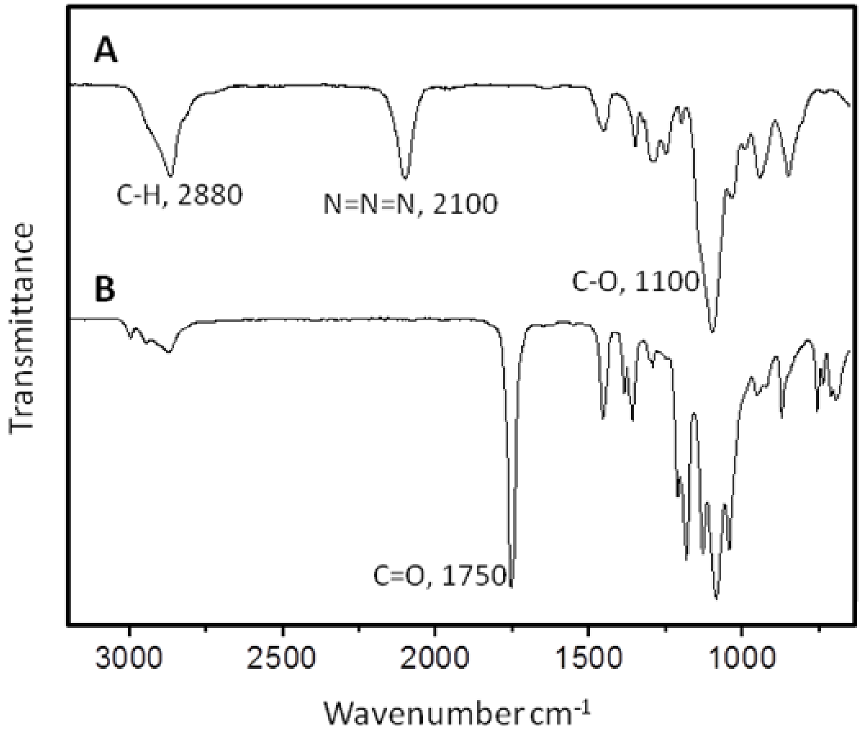

Figure S4. GPC chromatograms of PEG-PLA diblock and PEG-PLA-PEG triblock copolymer in T1 synthesis.