**Supporting Information**

# Biocompatible, pH-sensitive $AB_2$ Miktoarm Polymer-Based Polymersomes: Preparation, Characterization, and Acidic pH-Activated Nanostructural Transformation

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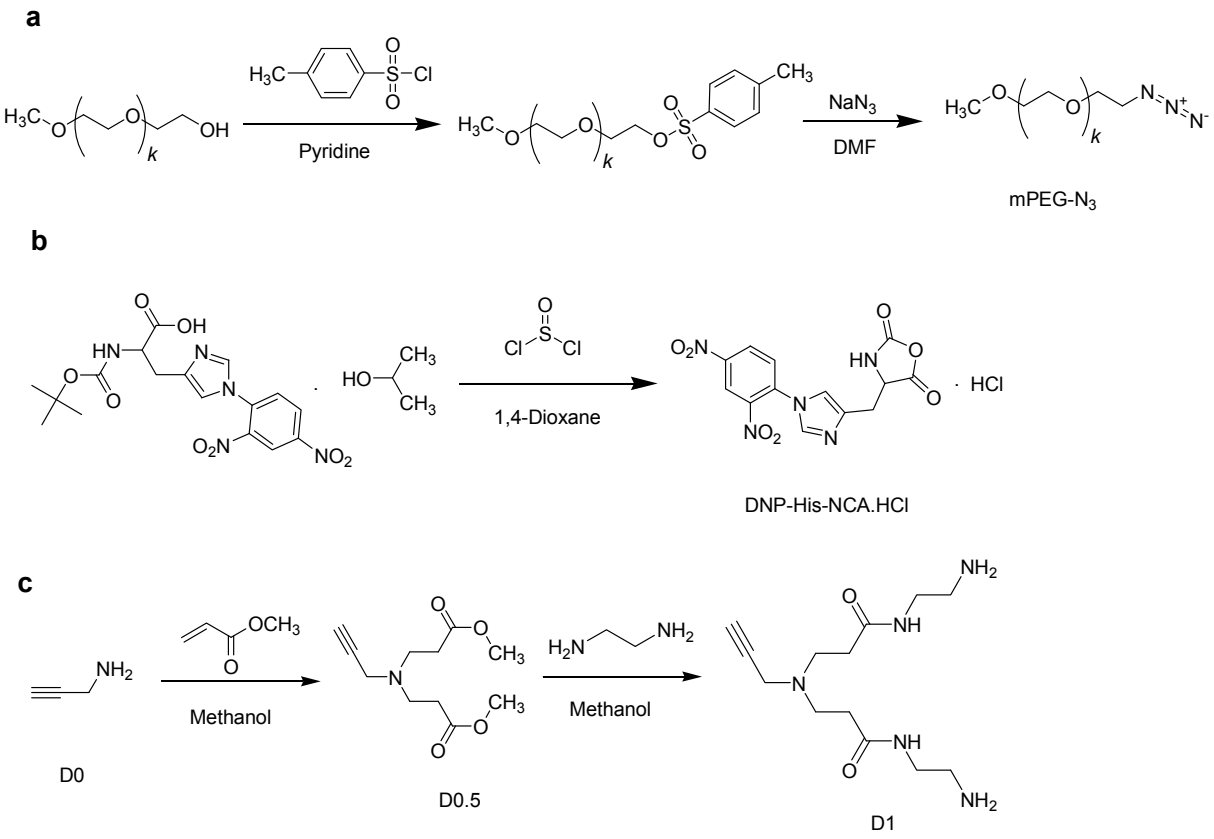



**Fig. S1**. Synthesis of block and core components for the 3-miktoarm block copolymers.

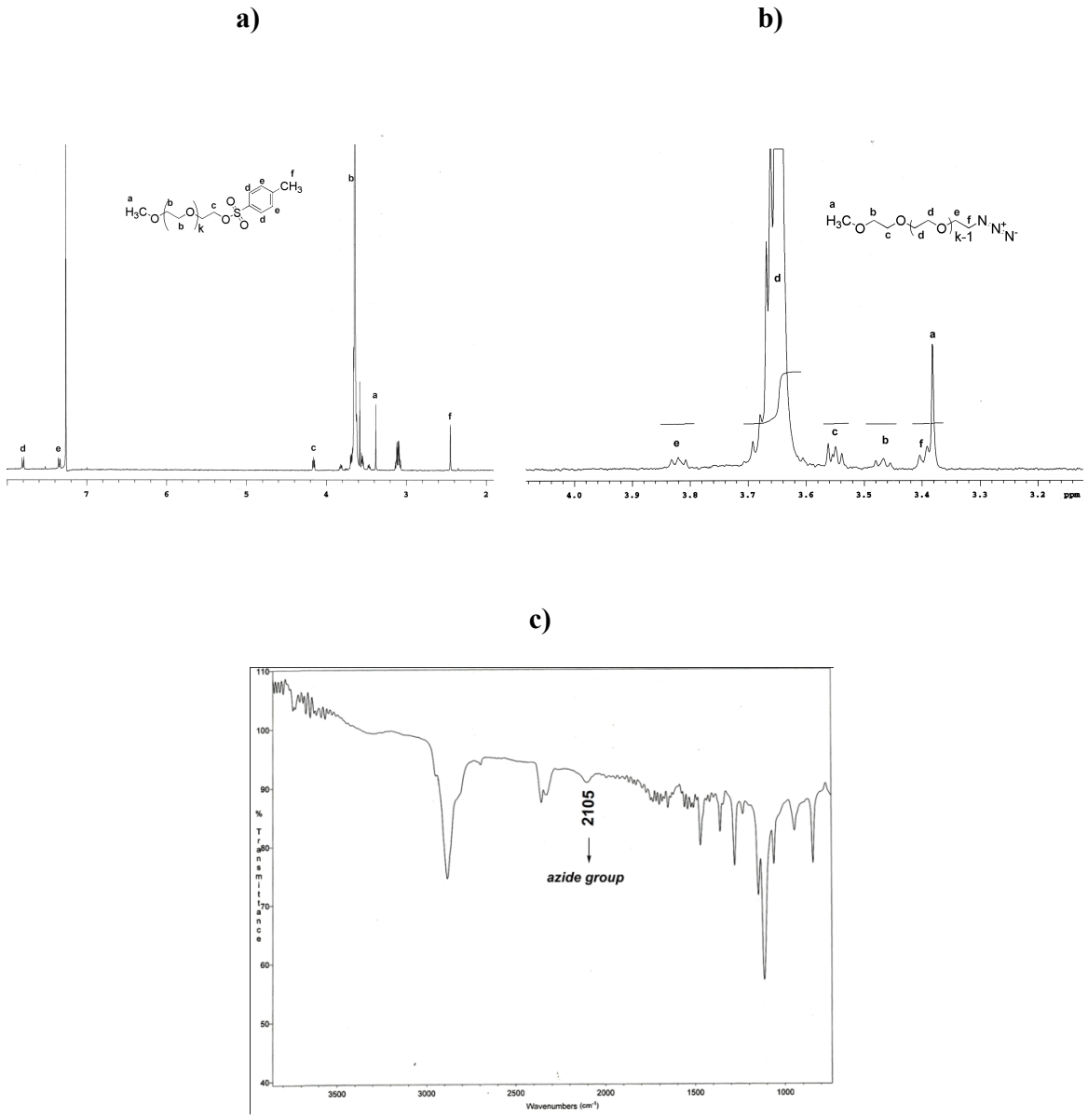



**Fig. S2**. $^{1}$H-NMR spectra of a) mPEG-TOS and b) mPEG-$N_3$ in $CDCl_3$ and c) FT-IR spectrum of mPEG-$N_3$ .

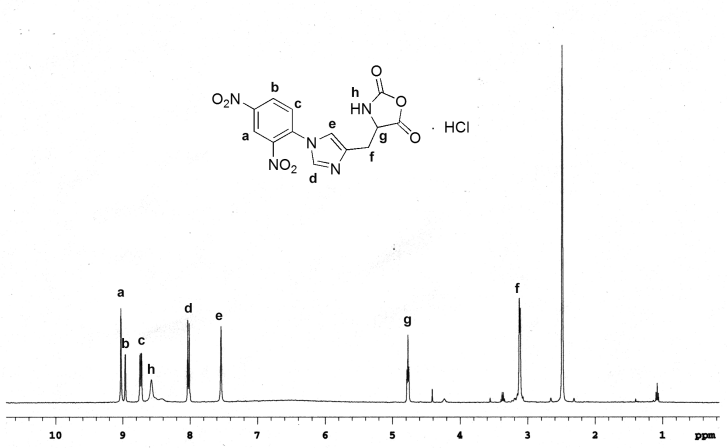
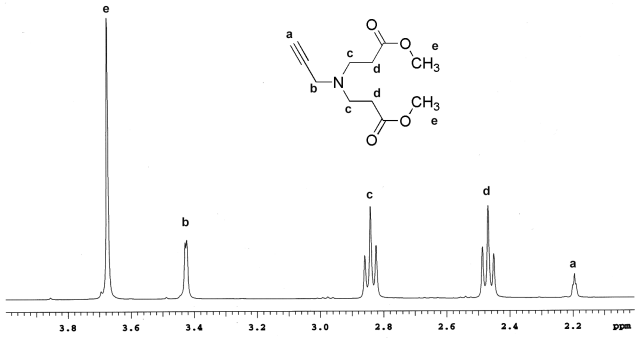



**Fig. S3**. $^{1}$H-NMR spectrum of DNP-His-NCA·HCl in $d_6$-DMSO.

**a)**




**b)**

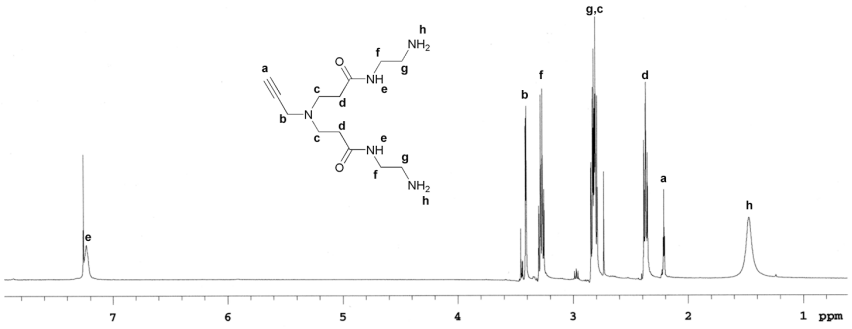
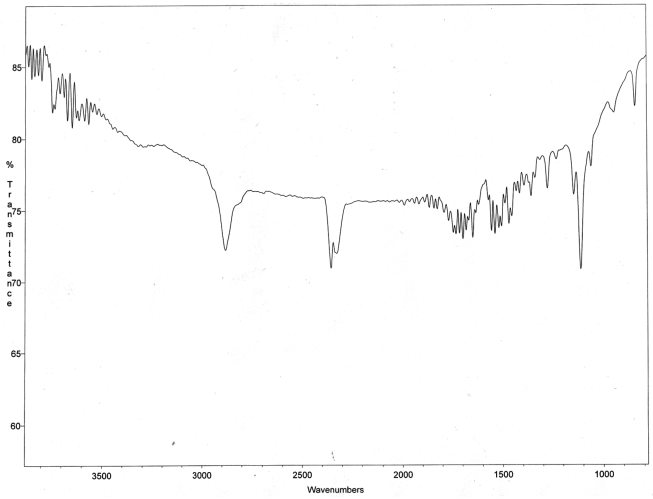



**Fig. S4**. $^{1}$H-NMR spectra of a) D0.5 and b) D1 in $CDCl_3$.

**a)**




**b)**

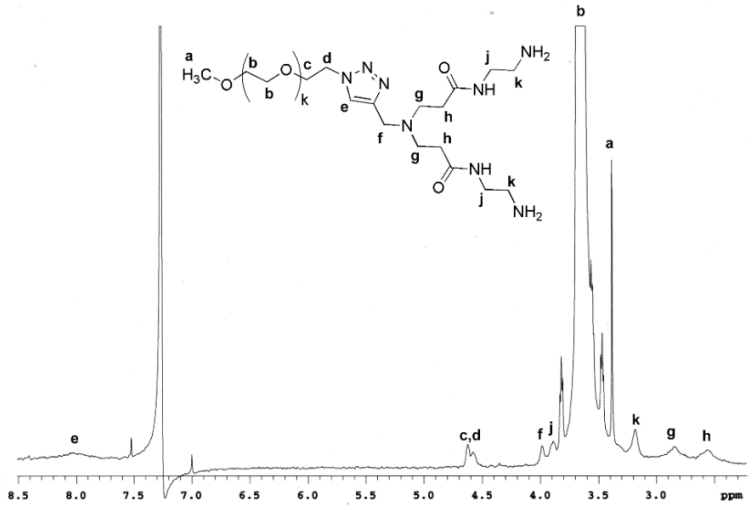
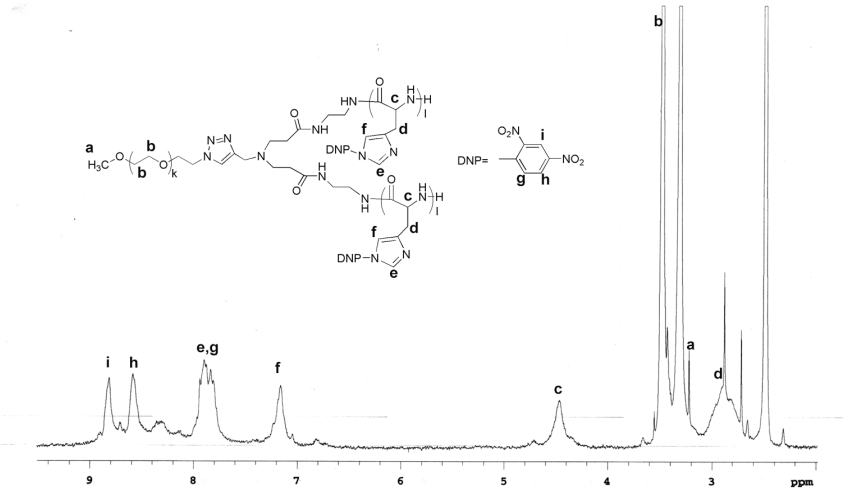



**Fig. S5**. a) FT-IR spectrum of mPEG-D1 and b) $^{1}$H-NMR spectrum of mPEG-D1 in $CDCl_3$.

**a)**




**b)**

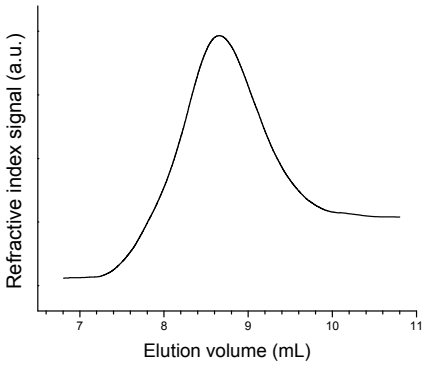



**Fig. S6**. a) $^{1}$H-NMR spectrum ($d_6$-DMSO) and b) GPC trace of mPEG-*b*-(poly(DNP-His))$_2$.

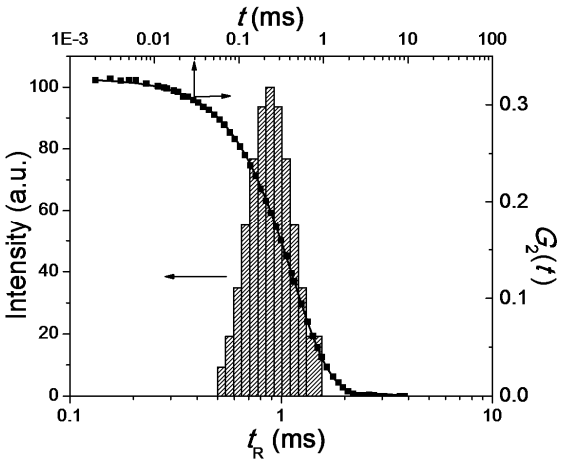



**Fig. S7**. DLS autocorrelation function and normalized time relaxation distribution at 90° for the polymer solution (pH 9.0, 0.3 mg/mL).

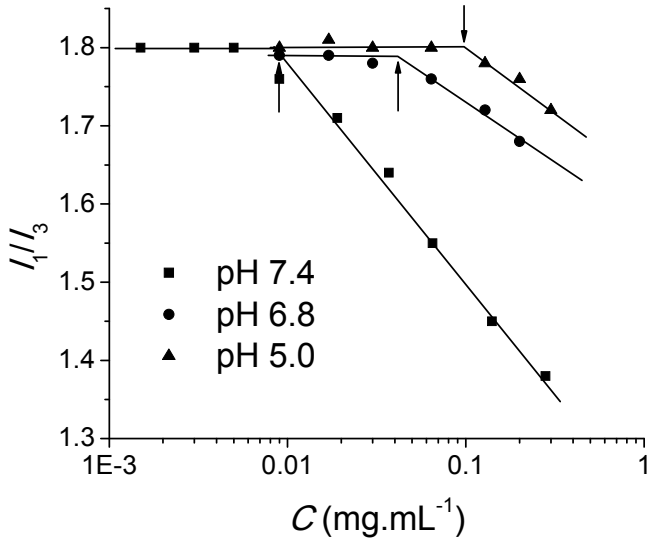



**Fig. S8**. The $I_1/I_3$ value of pyrene fluorescence as a function of polymer concentration at different pHs. Solid lines are guides for the eye. The CAC value was determined as the concentration at the intercept between the two straight lines within the low concentration range indicated by the solid arrows.