Supporting Information

pH- and Thermo-responsive Poly(N-isopropylacrylamide-*co*-Acrylic Acid Derivative) Copolymers and Hydrogels with LCST Dependent on pH and Alkyl Side Groups†

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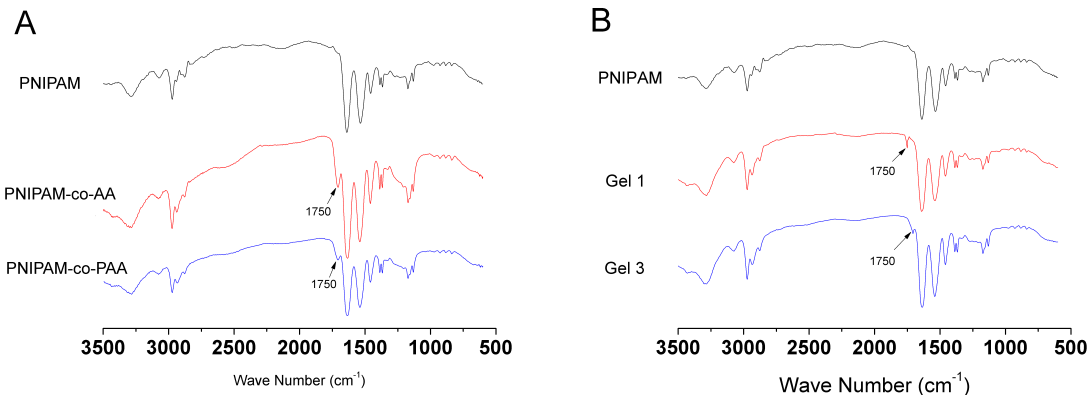

Figure S1. FT-IR spectra of P(NIPAM-*co*-AAD) copolymers (A) and hydrogels (B). The FT-IR spectrum of PNIPAM homopolymer was tested for comparison. The absorption peak appearing at 1750 cm^{-1} ($\nu_{C=O}$) can be assigned to the carboxyl groups, confirming the formation of copolymers containing acrylic acid derivatives.

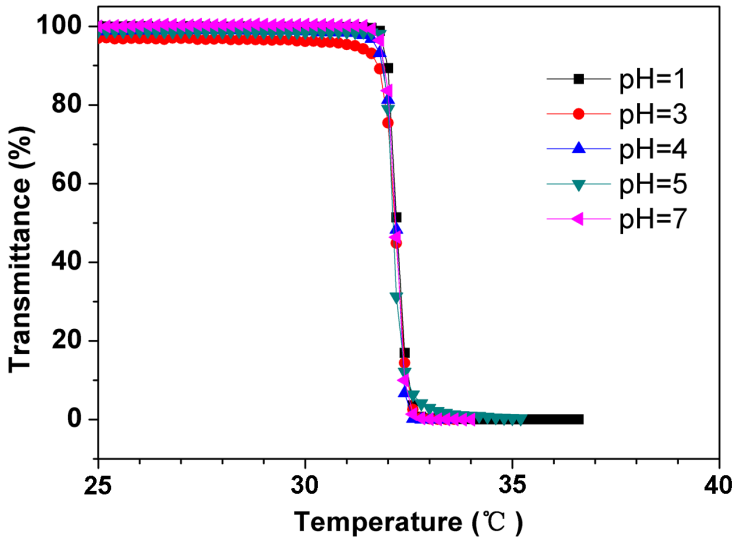

Figure S2. Thermo-induced phase transition curves of PNIPAM homopolymer solutions (2 mg/mL) at various pH values. The LCST of PNIPAM homopolymer was determined to be 32.2 ^{o}C at pH 7.0, and the LCST was not affected obviously by decreasing the pH from 7.0 to 1.0.

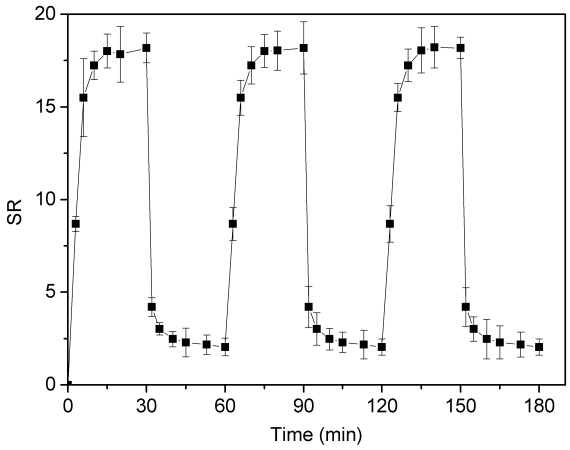

Figure S3. Reversible swelling-deswelling behaviors of Gel 2 in AGF (pH 1.2) or AIF (pH 6.8) at 37^{o}C. The hydrogels displayed reversible swelling-deswelling transitions with the change of pH at 37 ^{o}C. It was found that both the swelling and the deswelling processes were achieved within around 15 min in each cycle. This behavior made it possible to control the drug release process by a feed-back mechanism, rendering effectively protection of drugs from denaturation in hostile environments and triggered drug release at desirable sites.

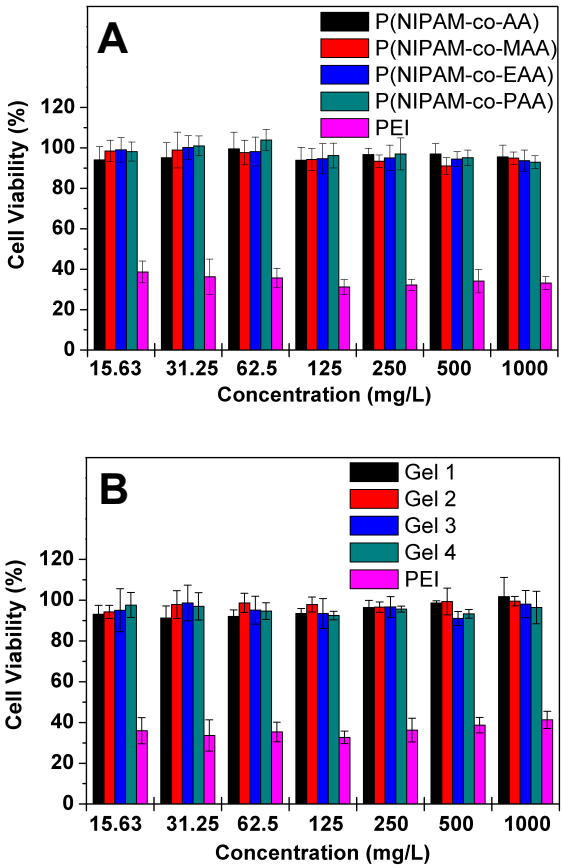

Figure S4. Cytotoxicities of P(NIPAM-*co*-AAD) copolymers (A) and hydrogels (B) against L929 cells evaluated by MTT assay. PBS and PEI solution were used as the negative control and positive control, respectively.