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Bio-Inspired Fluorescent Nano-Injectable Hydrogel as a Synergistic Drug Delivery System

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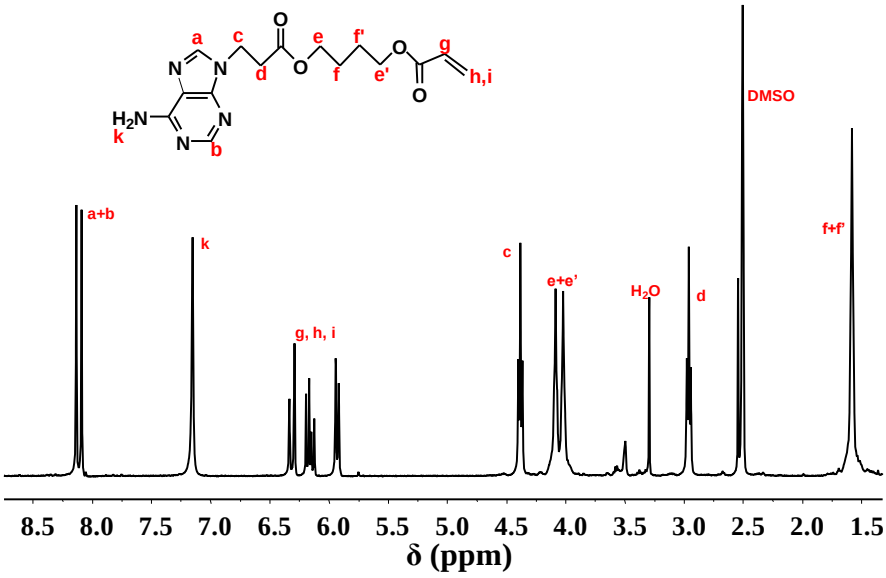

Figure S 1 ^{1}H-NMR spectrum of BA-A in DMSO-d_6.

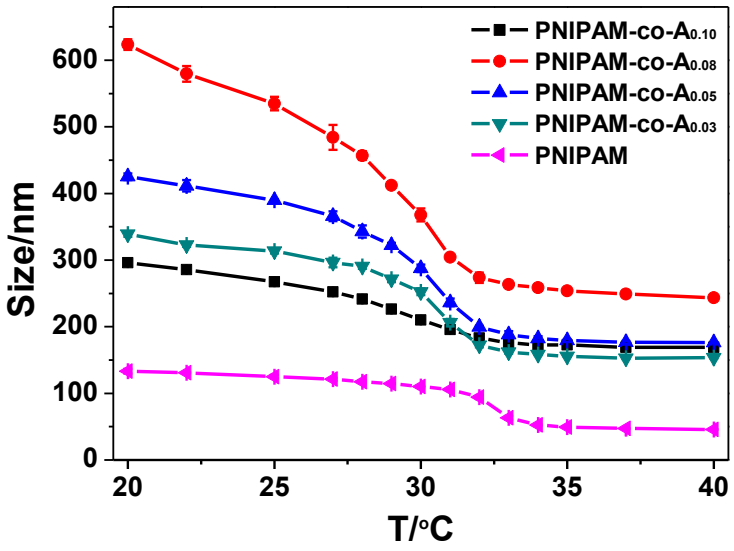

Figure S2. Analysis of the hydrodynamic diameters of PNIPAM-co-A with different BA-A contents (1 mg/mL) in aqueous solution. Data are shown as mean SD (n = 3).

The hydrodynamic diameters of nanogels were measured by dynamic light scattering as shown in Figure S2.PNIPAM nanogels are temperature responsive and have LSCT at around 32 °C. We investigated the temperature responsiveness of PNIPAM-co-A nanogels with different BA-A monomer ratios by detecting the change of hydrodynamic diameters. As shown in Figure S2, the nanogel size showed an overall decreasing trend with increasing temperature, which was caused by the temperature sensitivity of PNIPAM. In other words, as the

temperature increases, the hydrophobicity of nanogel increases, resulting the nanogel size shrink. In addition, BA-A was a hydrophobic monomer whose hydrophobicity will increase the nanogel size as the proportion of BA-A increases. However, the increase in hydrogen-bond of adenine crosslink density can reduce the nanogel size. It can be seen that when the BA-A ratio of PNIPAM-co-A was less than 10 %, the nanogel size became larger as the proportion of the BA-A monomer increases. when the proportion was 10 %, the size of nanogel decreased instead. Therefore, it can be shown that when BA-A accounts for less than 10%, the hydrophobicity of BA-A predominated, resulting in a larger nanogel as the BA-A monomer increases. Conversely, at a 10 % ratio of BA-A, the increase of the crosslink density lead to a decrease of nanogel.