Supporting Information

Hydrogen-bonding reinforced injectable hydrogels: Application as a thermo-triggered drug controlled-release system

*Dong Wang[1], Yuzheng Xia[1], Dong Zhang[1], Xiaomeng Sun[1], Xiaonong Chen[1], Susan Oliver[2], Shuxian Shi[1, *], and Lei Lei[2, *]*

[1]Beijing Laboratory of Biomedical Materials, Beijing University of Chemical Technology, Beijing 100029, China

[2]Centre for Advanced Macromolecular Design, School of Chemical Engineering, University of New South Wales, Sydney, NSW 2052, Australia

*Correspondence to: S. Shi (shisx@mail.buct.edu.cn) and L. Lei (lei.lei@unsw.edu.au)

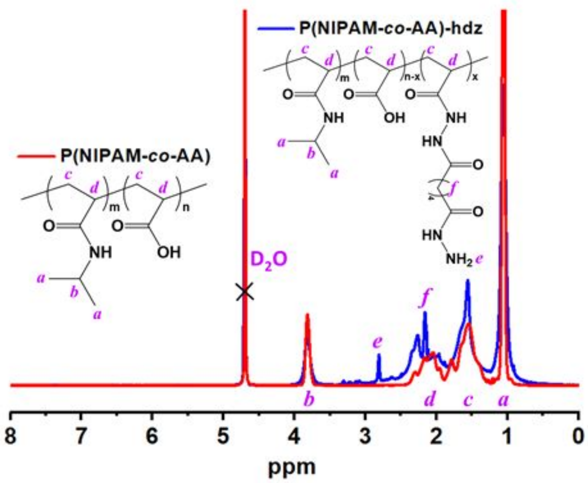

Figure S1. ^{1}H-NMR spectra of poly(NIPAM-*co*-AA) and poly(NIPAM-*co*-AA)-hdz

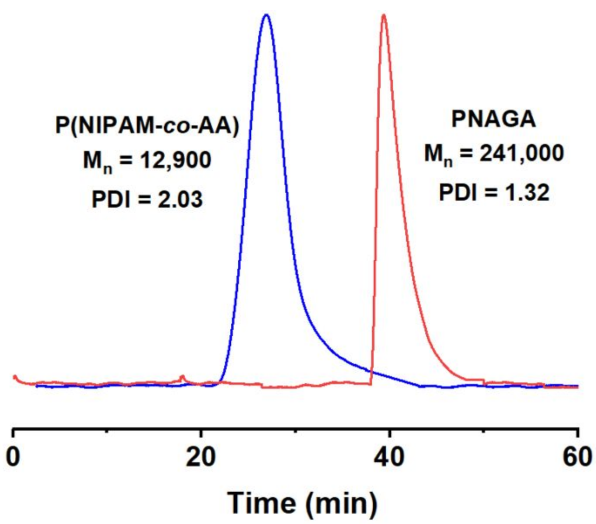

Figure S2. GPC spectra of poly(NIPAM-*co*-AA) and PNAGA

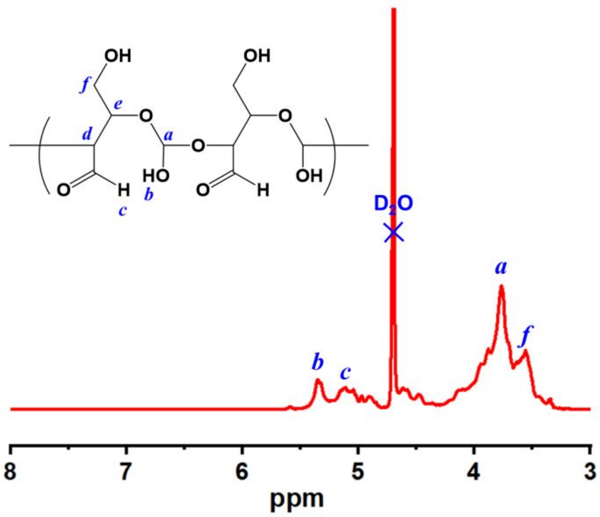

Figure S3. ^{1}H-NMR spectrum of dialdehyde dextrin

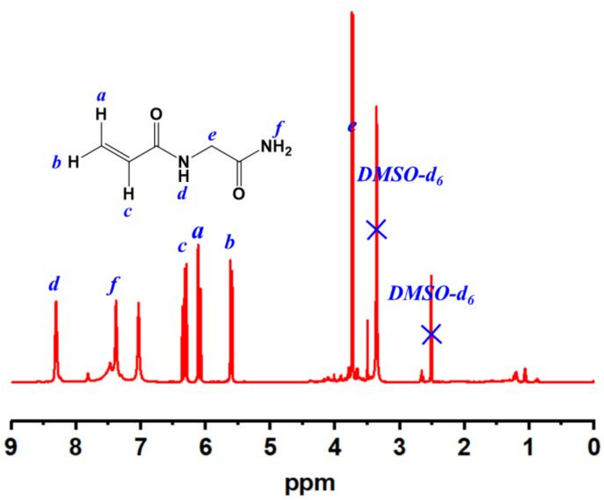

Figure S4. ^{1}H-NMR spectrum of NAGA in DMSO-d_6

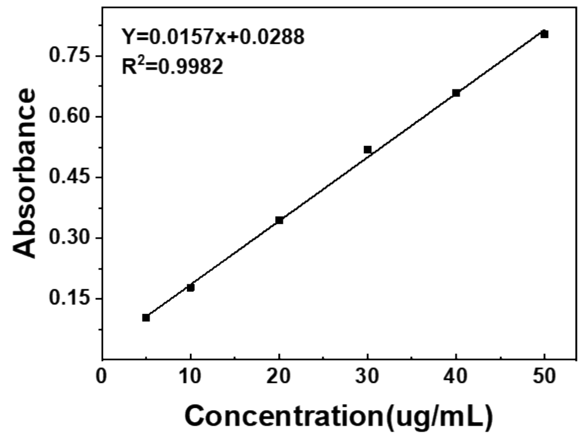

Figure S5. Standard curve of absorbance and concentration of propranolol hydrochloride

Table S1. Parameters of kinetic models for propranolol hydrochloride at the second stage

Sample	Korsmeyer–Peppas modela			Higuchi modelb	
	K	n	R^2	K	R^2
$H_{9.0}D_{0.5}$	7.70*10^{154}	0.021	0.6211	3.55	0.6762
$H_{9.0}D_{1.0}$	5.72*10^{73}	0.058	0.8769	0.85	0.9096
$H_{9.0}D_{1.5}$	1.15*10^{99}	0.041	0.8490	0.46	0.8542
$H_{9.0}D_{2.0}$	1.81*10^{205}	0.012	0.8355	0.14	0.9183
$H_{9.0}N_{1.5}D_{0.5}$	1.35*10^{44}	0.093	0.7887	2.13	0.8556
$H_{9.0}N_{1.5}D_{1.0}$	3.23*10^{78}	0.054	0.8575	0.77	0.8672
$H_{9.0}N_{1.5}D_{1.5}$	1.72*10^{109}	0.038	0.8402	0.46	0.8041
$H_{9.0}N_{1.5}D_{2.0}$	3.53*10^{200}	0.021	0.6105	0.27	0.6975

[a] The mathematical expressions of Korsmeyer–Peppas model:[1,2]

$$Q = Kt^{n}$$ **Exponent (S1)**

[b] The mathematical expressions of Higuchi model:[2,3]

$$Q = Kt^{1/2}$$ **Exponent (S2)**

Where "Q" represents the cumulative release of the drug at time "t", "K" represents the kinetic constant, and "n" represents the diffusion constant. The release mechanism from Fickian (diffusion-controlled) or anomalous (degradation of polymer and diffusion controlled) is determined by exponent (n): $n \leqslant 0.45$ suggests the Fickian diffusion mechanism. $0.45 < n < 0.89$ indicates an anomalous drug release mechanism. $n \geqslant 0.89$ suggests substrate corrosion.[1,2]

REFERENCES

(1) Korsmeyer, R. W.; Gurny, R.; Doelker, E.; Buri, P.; Peppas, N. A. Mechanisms of Solute Release from Porous Hydrophilic Polymers. *Int. J. Pharm.* **1983,** *15* (1), 25-35.

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(3) Higuchi, T. Mechanisms of Sustained-action Medication. Theoretical Analysis of Rate of Release of Solid Drugs Dispersed in Solid Matrices. *J. Pharm. Sci.* **1963,** *52* (12), 1145-1149.