

Supporting Information

pH/redox Dual-Sensitive Nanoparticles Based on PCL/PEG Triblock Copolymer for Enhanced Intracellular Doxorubicin Release

Yan Cao^a, Junqiang Zhao^a, Yumin Zhang^b, Jianfeng Liu^b, Jinjian Liu^b, Anjie Dong^{a,c}, Liangdong Deng^{a*}

^a Department of Polymer Science and Technology and Key Laboratory of Systems Bioengineering of the Ministry of Education, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China

^b Tianjin Key Laboratory of Radiation Medicine and Molecular Nuclear Medicine, Institute of Radiation Medicine, Chinese Academy of Medical Science and Peking Union Medical College, Tianjin, 300192, China

^c Collaborative Innovation Center of Chemical Science and Engineering (Tianjin), Tianjin 300072, China

* Corresponding author:

Tel: +86 22 27890707;

Fax: +86 22 27890706;

E-mail addresses: dengliandong@aliyun.com

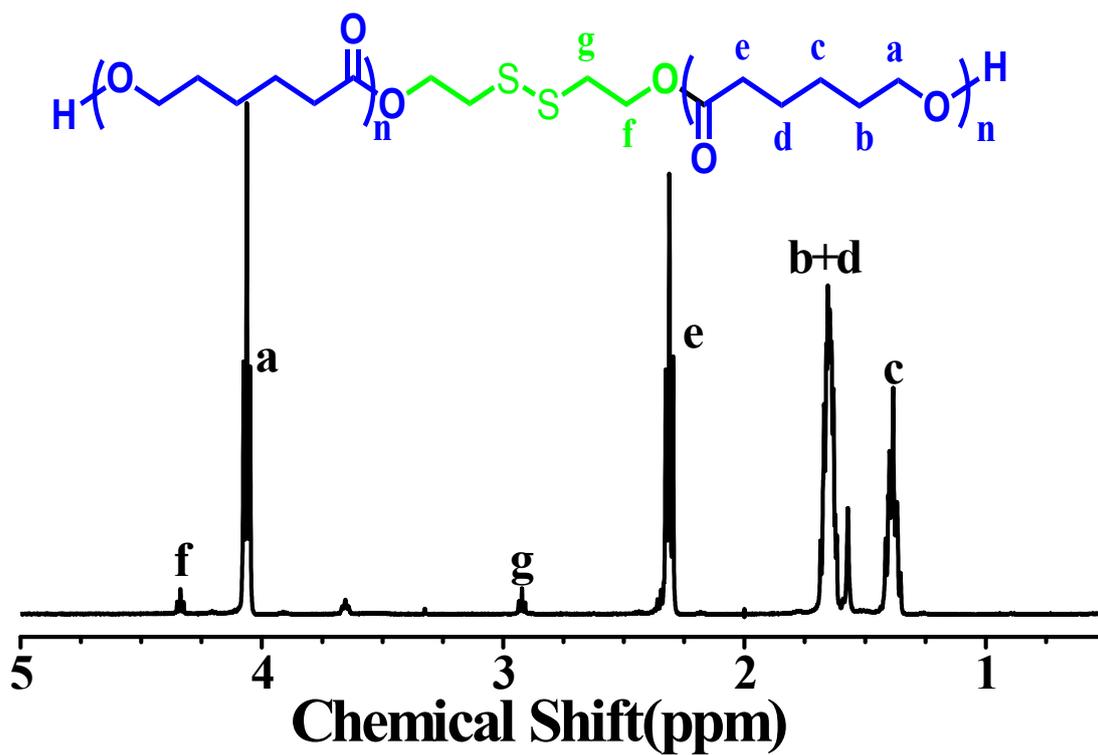


Figure S1. ¹H NMR spectrum of PCL-SS-PCL.

The degree of polymerization calculated by the integrals of peaks appeared at 4.06 ppm (CH₂-OOC-, **a**) and 2.92 ppm (CH₂-SS-CH₂, **g**) was 19.32.

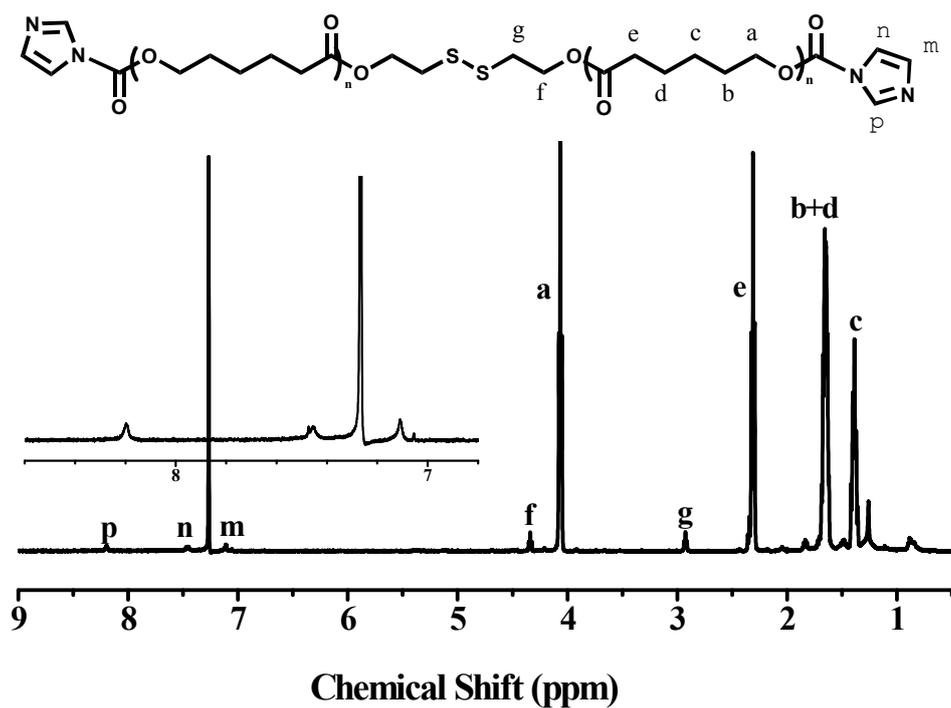


Figure S2. ^1H NMR spectrum of CDI-PCL-SS-PCL-CDI.

The activation rate calculated by the integral of peaks at about 8.2 ppm belonging to imidazole group and 2.92 ppm belonging to HES was near 100%.

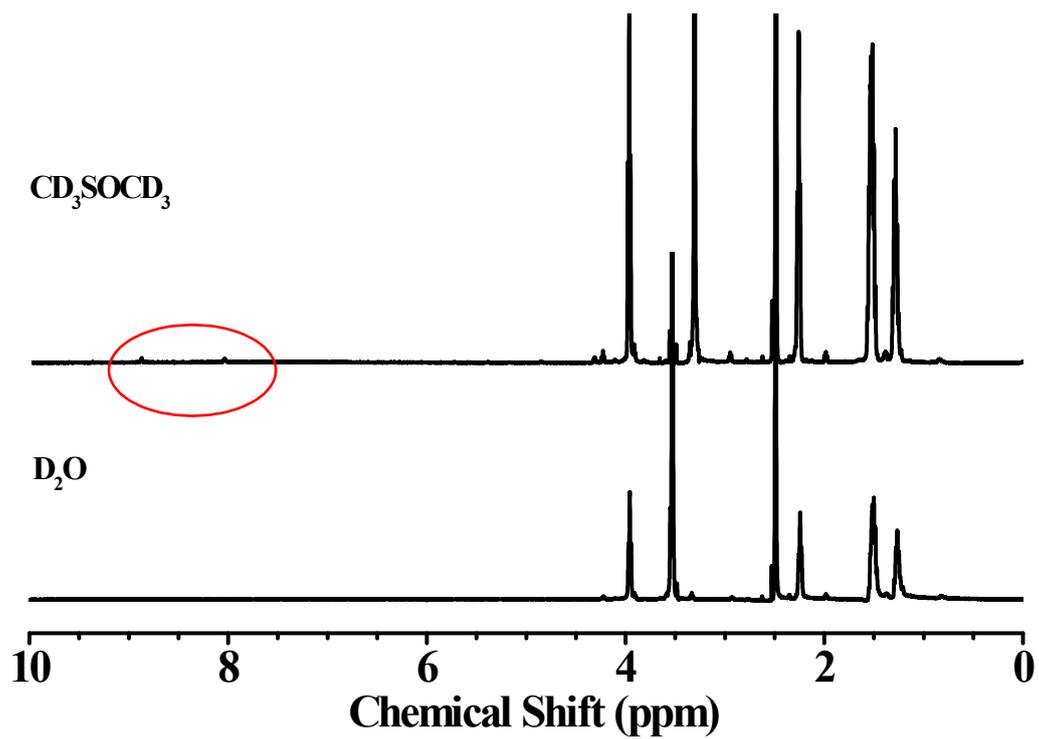


Figure S3. ¹H NMR spectrum of NH₂-NH-PCL-SS-PCL-NH-NH₂ in DMSO-d₆ (above) and D₂O (below).

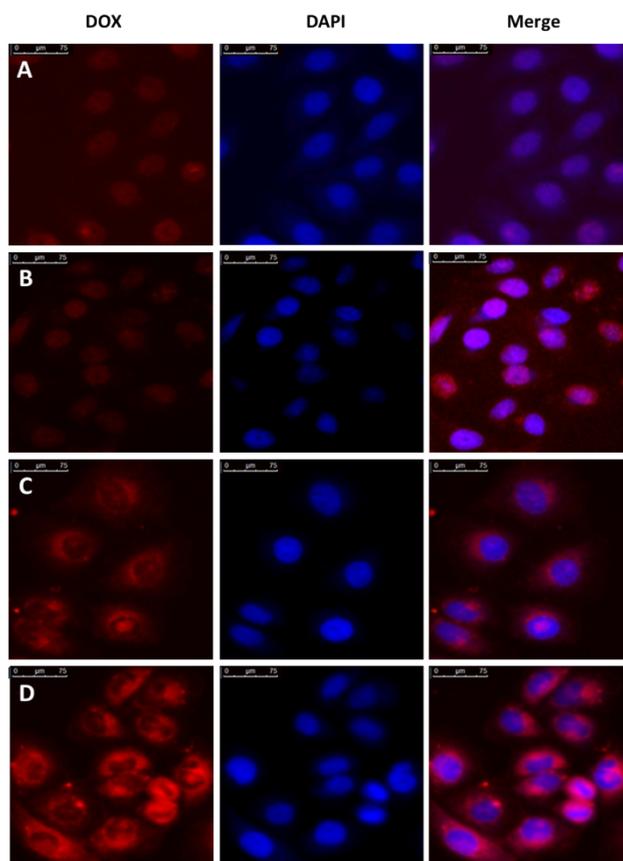


Figure S4. Fluorescence microscopy images of HeLa cells incubated for 2 h with free DOX (A, B) or DOX-loaded NPs (C, D). (A) and (C) were groups without the GSH pretreatment, (B) and (D) were groups with the GSH pretreatment. From left to right DOX (red), DAPI (blue) and merge of the two images.

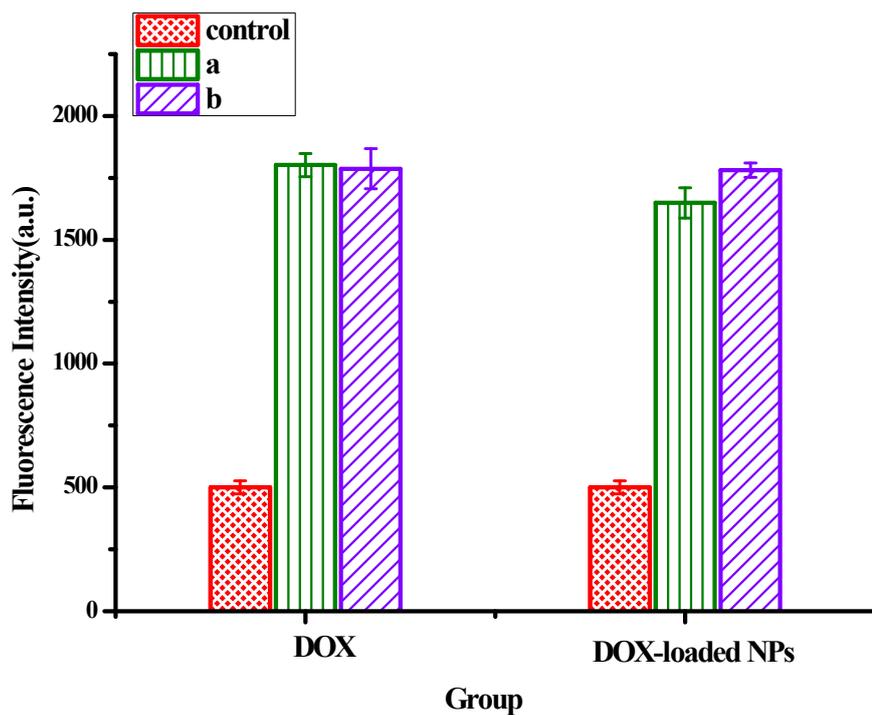


Figure S5. Flow cytometric results of HeLa cells incubated with free DOX·HCl or DOX-loaded NPs for 2 h. The cells were not pretreated (a) or pretreated (b) with 10 mM GSH.