

Supplementary data

Fabrication of PEGylated graphitic carbon nitride quantum dots as traceable, pH-sensitive drug delivery systems

Jian Dong,^{‡*a} Yanli Zhao,^{‡a} Hongyu Chen,^a Li Liu,^a Wenxian Zhang,^a Baoliang Sun,^b Mingfeng Yang,^b Yi Wang,^c and Lifeng Dong^{*a}

^a School of Chemistry and Pharmaceutical Engineering, Taishan Medical University, Taian, 271016, P. R. China. E-mail: lfdong@tsmc.edu.cn and dongjian@tsmc.edu.cn

^b Key Laboratory of Cerebral Microcirculation in Universities of Shandong and Department of Neurology of Affiliated Hospital, Taishan Medical University, Taian, Shandong 271016, P. R. China

^c Institute of Optometry and Department of Ophthalmology of Affiliated Hospital, Taishan Medical University, Taian, Shandong 271016, P. R. China

[‡]These two authors contributed equally.

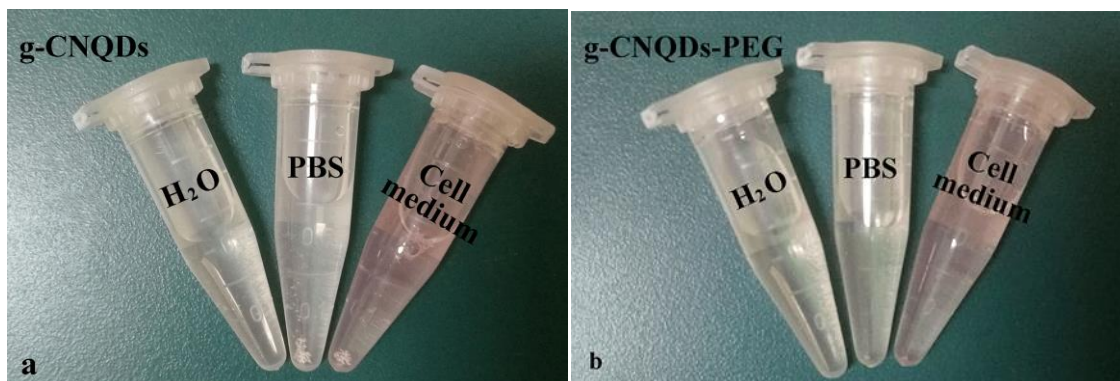


Fig. S1 The stability of (a) g-CNQDs in water, PBS, and cell medium after 48 h; and the stability of (b) g-CNQDs-PEG in water, PBS, and cell medium after 30 days.

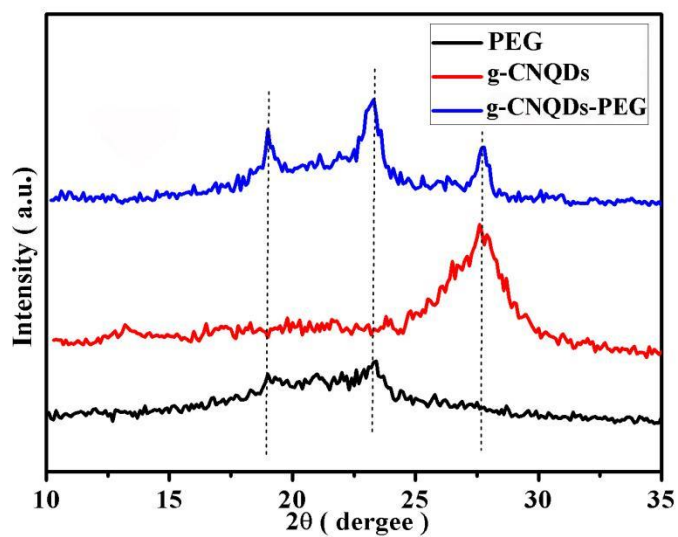


Fig. S2 The XRD spectra of g-CNQDs, g-CNQDs-PEG, and PEG.

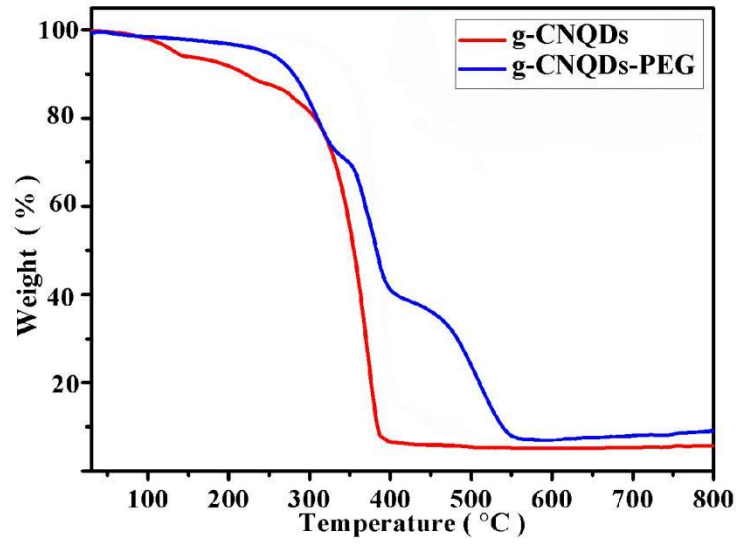


Fig. S3 TGA (in N₂) of g-CNQDs and g-CNQDs-PEG with a heating rate of 5 °C min⁻¹.

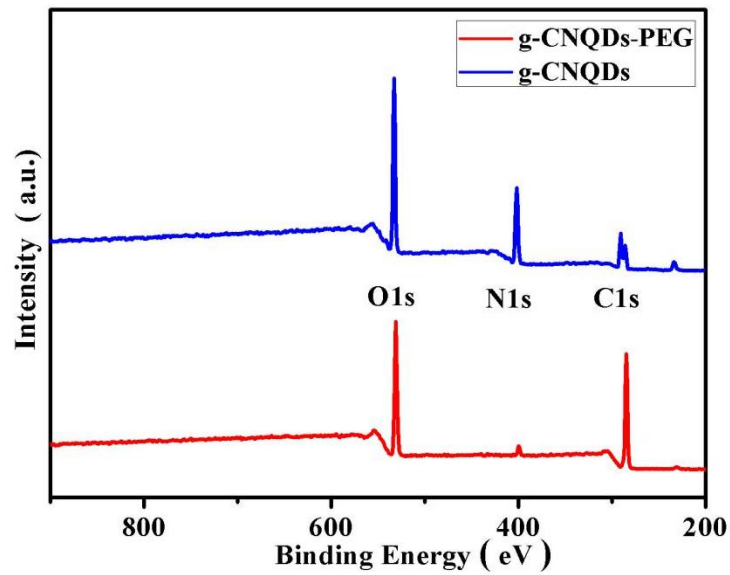


Fig. S4 Survey XPS spectra of g-CNQDs and g-CNQDs-PEG.

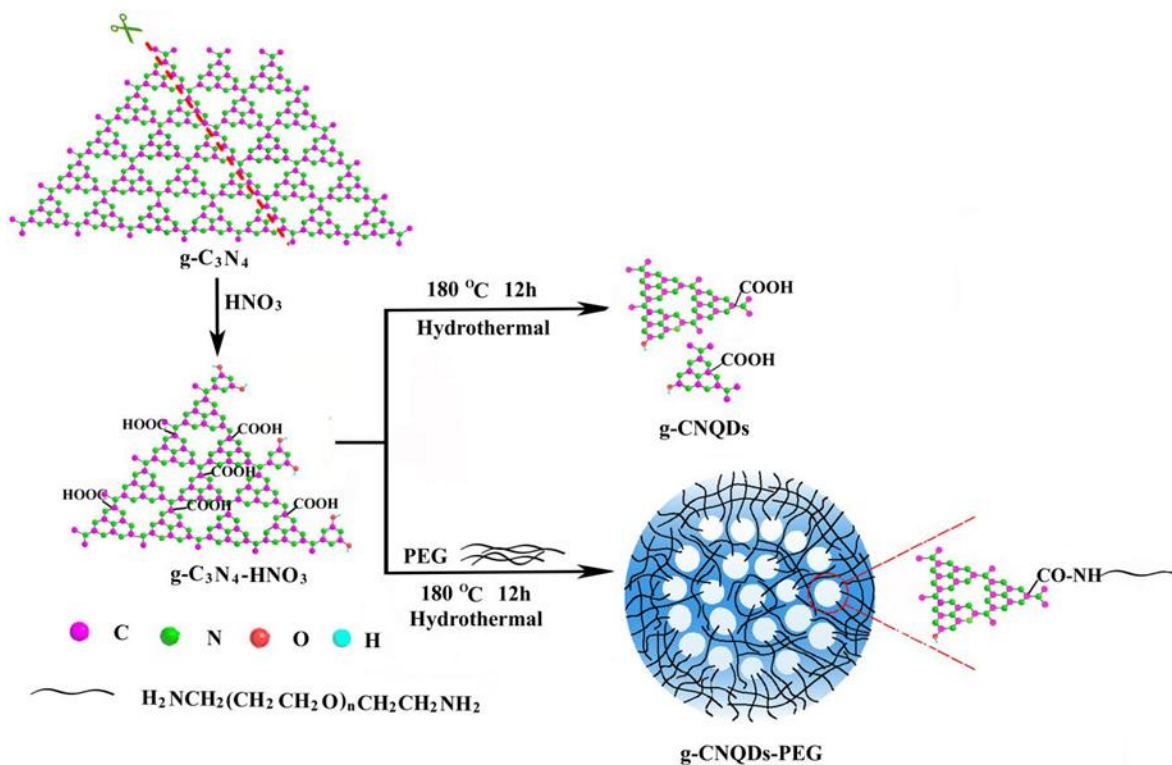


Fig. S5 Illustration of the synthesis of g-CNQDs and g-CNQDs-PEG.

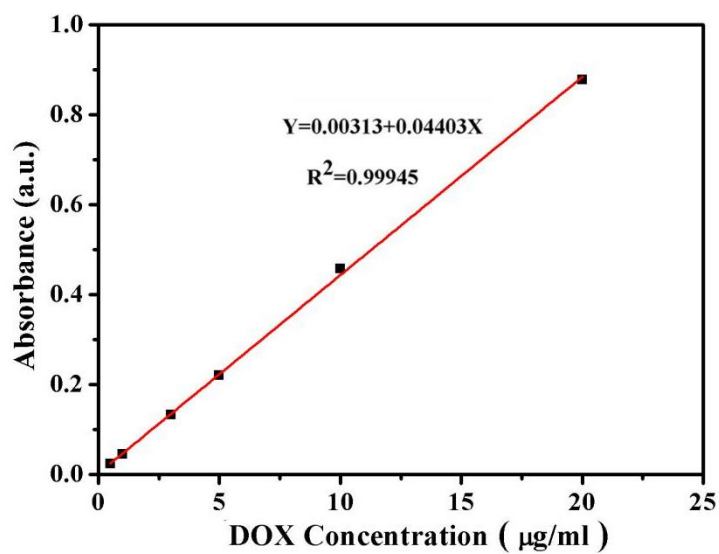


Fig. S6 UV-Vis absorbance standard curve of DOX at 480 nm.

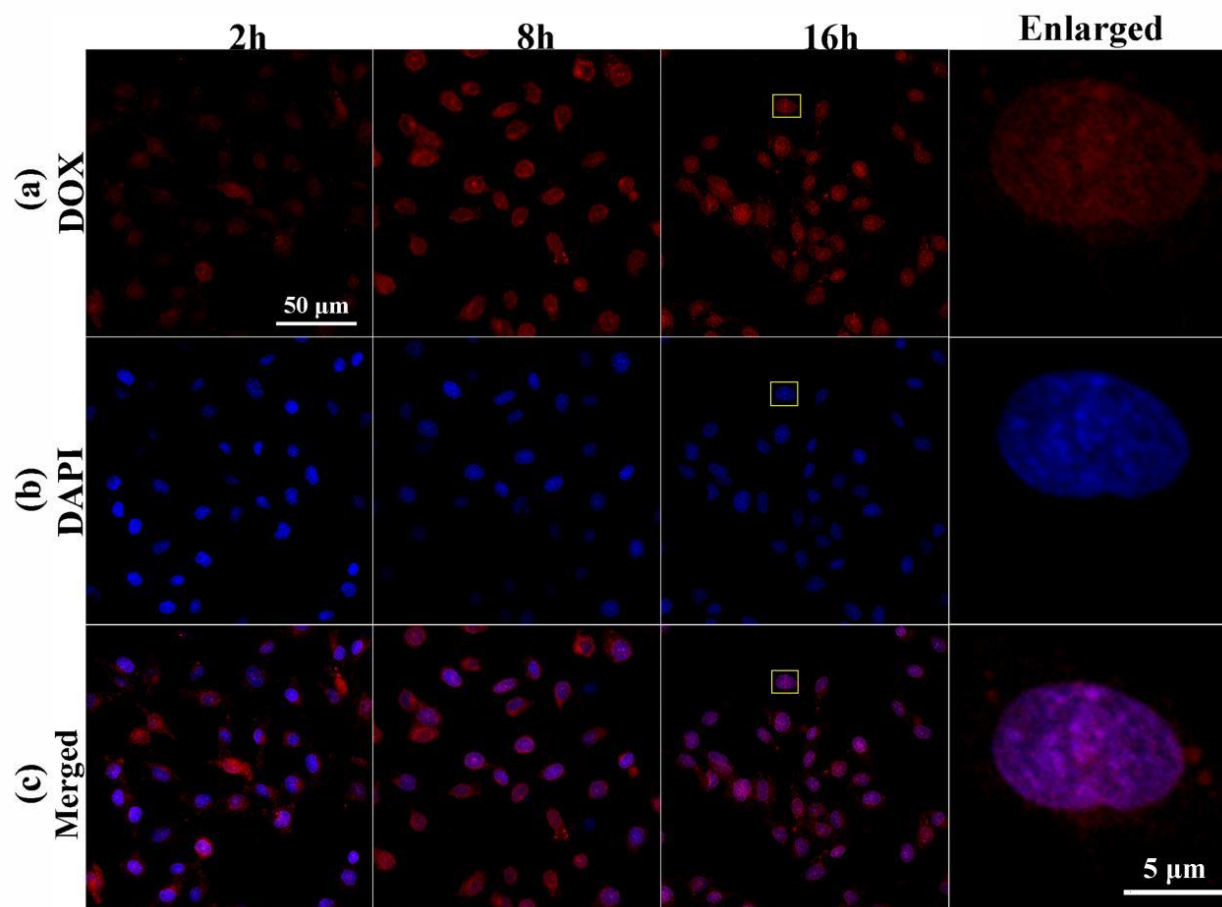


Fig. S7 CLSM images of U251 cells treated with g-CNQDs-PEG at a concentration of $5 \mu\text{g mL}^{-1}$ after incubation for 2, 8, and 16 h: (a) DOX excited by a 405 nm laser and signals collected in the range of $595\pm 50 \text{ nm}$; (b) cell nuclei stained with DAPI excited by a 405 nm laser and signals collected from $450\pm 50 \text{ nm}$; (c) merged images of DOX and DAPI.