

## Supplementary Data

### Near-Infrared Light Triggered ROS-activated Theranostics Platform Based on Ce6-CPT-UCNPs for Simultaneous Fluorescence Imaging and Chemo-Photodynamic Combined Therapy of Lung Cancer

Caixia Yue<sup>2,1</sup>, Chunlei Zhang<sup>1</sup>, Gabriel Alfranca<sup>1</sup>, Yao Yang<sup>1</sup>, Yuming Yang<sup>1\*</sup>, Fei Pan<sup>1</sup>, Jesús M. de la Fuente<sup>1</sup> and Daxiang Cui<sup>1,3\*</sup>

<sup>1</sup>Institute of Nano Biomedicine and Engineering, Key Laboratory for Thin Film and Microfabrication Technology of the Ministry of Education, Department of Instrument Science & Engineering, School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China

<sup>2</sup>School of Biomedical Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China

<sup>3</sup>National Center for Translational Medicine, Collaborative Innovative Center for System Biology, Shanghai Jiao Tong University, Shanghai 200240, P. R. China

\*Corresponding author: E-mail: yumingyang@sjtu.edu.cn or dx cui@sjtu.edu.cn

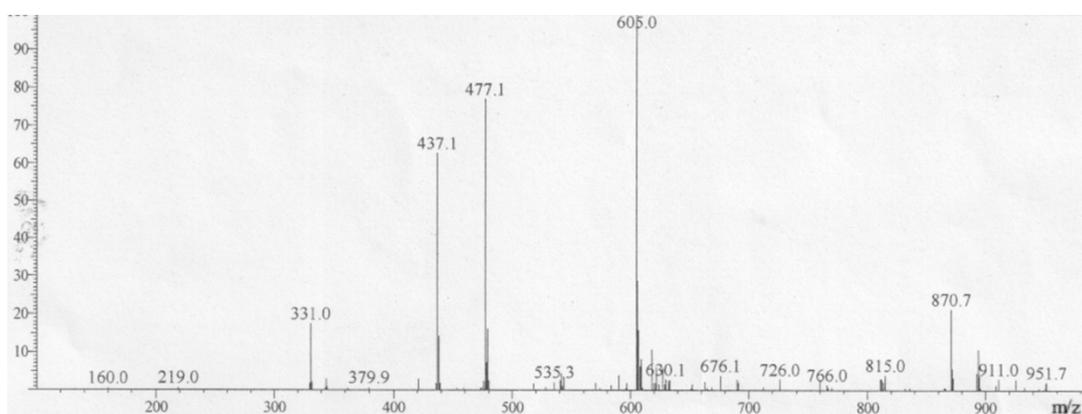


Fig.S1. Mass spectrum of ROS responsive camptothecin (TL-CPT). The mass-to-charge ratio ( $m/z$ ) of 605.0

$[M+Na]^+$  corresponded to TL-CPT.

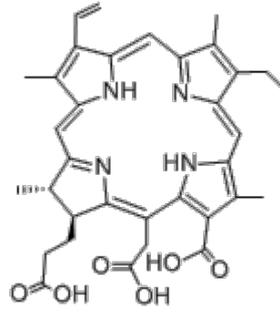


Fig.S2.Structural formula of Ce6.

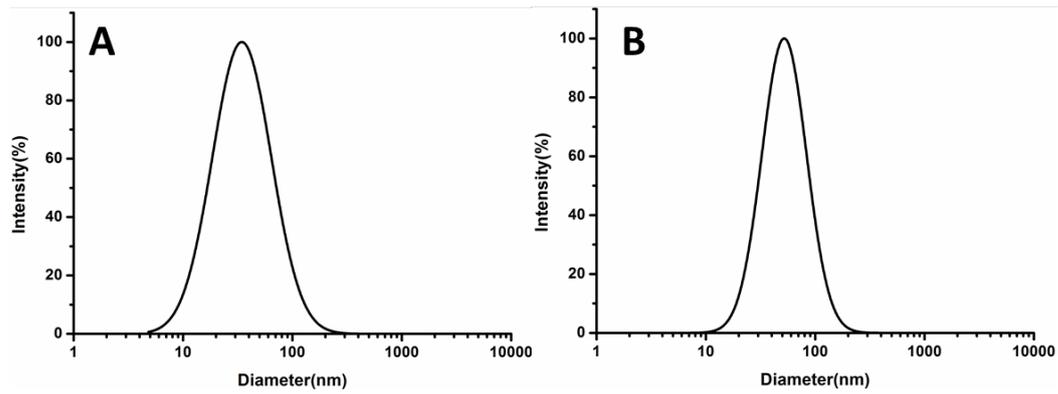


Fig.S3.(A)Aqueous size of naked UCNPs was about 42 nm by dynamic light scattering (DLS);(B)Aqueous size of Ce6-CPT-UCNPs was about 68 nm.

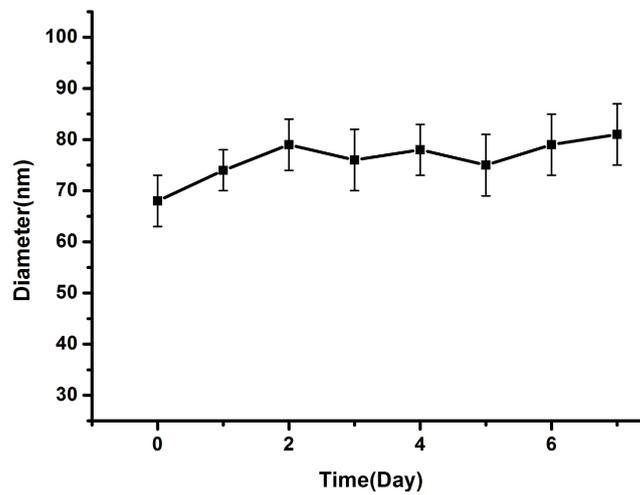


Fig.S4.Stability of Ce6-CPT-UCNPs in RPMI-1640 medium with 10% fetal calf serum.

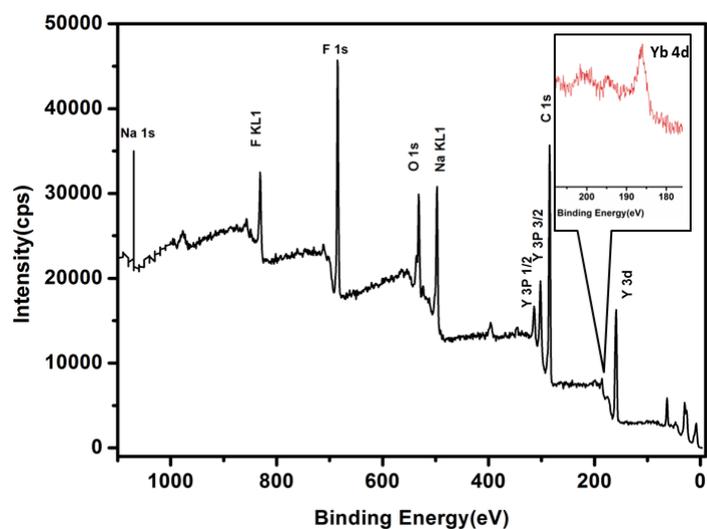


Fig.S5. XPS spectrum of the naked UCNPs.

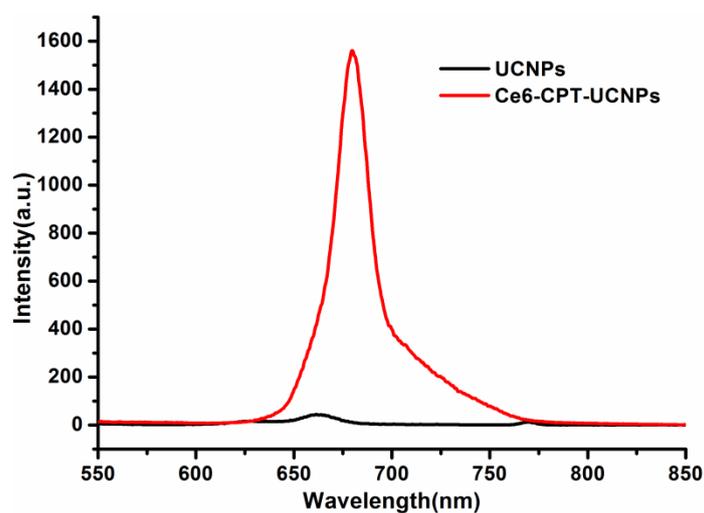


Fig.S6. Fluorescence luminescence spectra of UCNPs and Ce6-CPT-UCNPs in water,excitation:510nm.

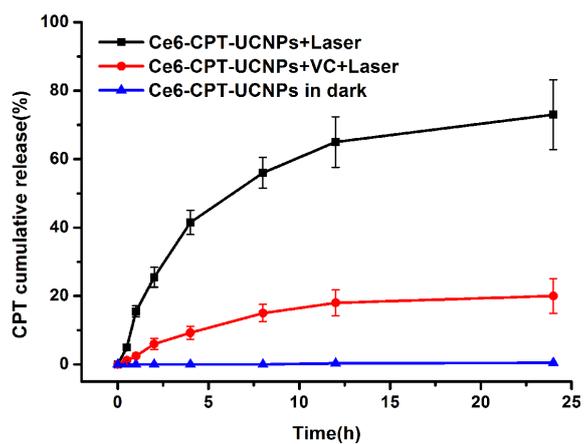


Fig.S7. Cumulative release profiles of CPT from nanoparticles with and without laser irradiation.

Standard deviations are shown as error bars for three parallel experiments.

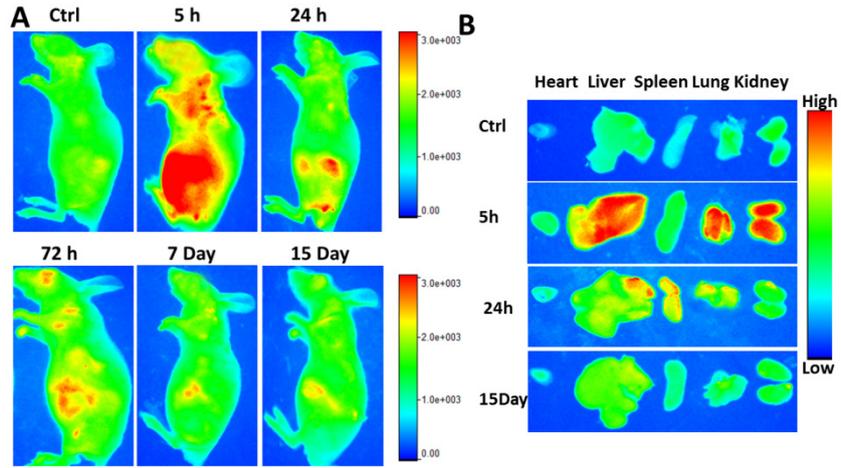


Fig.S8. Real-time *in vivo* and *ex vivo* fluorescence imaging of healthy athymic nude mice with intravenous injection of Ce6-CPT-UCNPs (15 mg/kg) at different time points.