

Gd³⁺ ion-induced carbon dots assembly aggregates with Photosensitizer for enhanced fluorescence/MRI dual imaging and antitumor therapy

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C-dots	
Zeta Potential (mv)	− 31.54 ± 2.35

Figure S1. Zeta potential of C-dots.

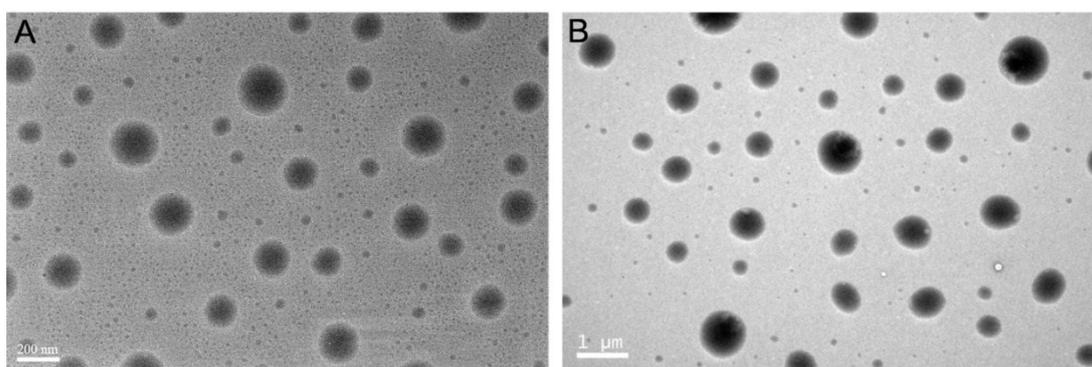


Figure S2. Transmission electron microscopy (TEM) images of C-dots assembled in different Gd³⁺ concentrations ($R_{[Gd^{3+}]/[TRP]} = 0.2, 0.4$).

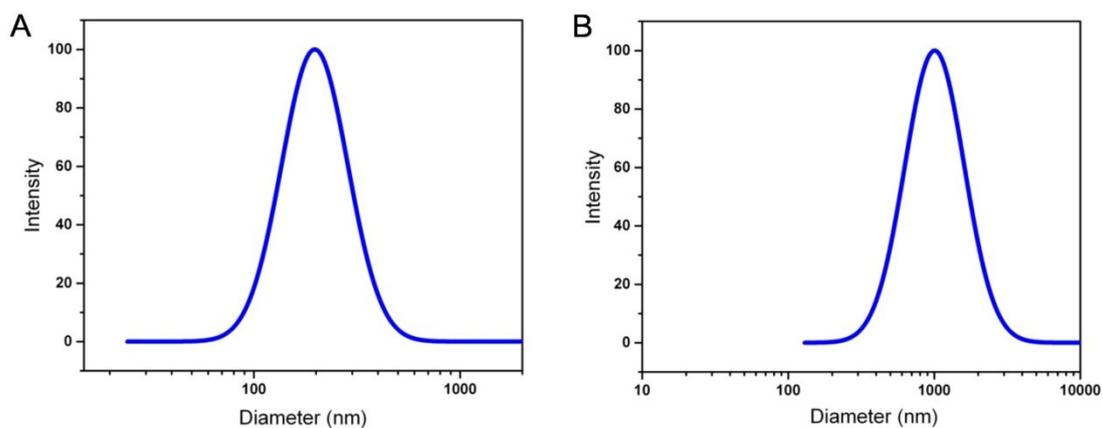


Figure S3. Hydrodynamic diameter analysis of C-dots assembled in different Gd³⁺ concentrations ($R_{[Gd^{3+}]/[TRP]} = 0.2, 0.4$).

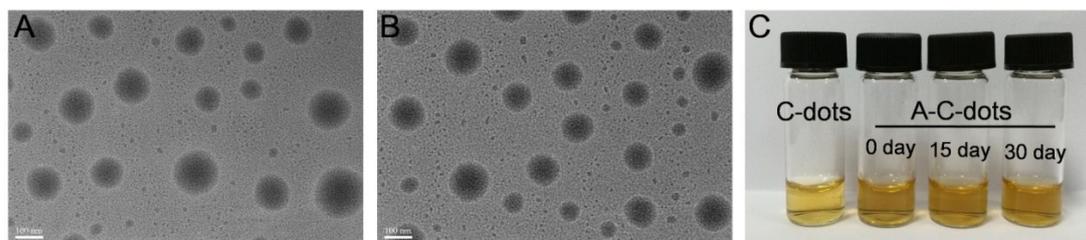


Figure S4. The stability of the C-dots assembly. The TEM images of the C-dots assembly dispersed in aqueous for 15 days (A) and 30 days (B). (C) The digital photos of the A-C-dots dispersed in aqueous for different times.

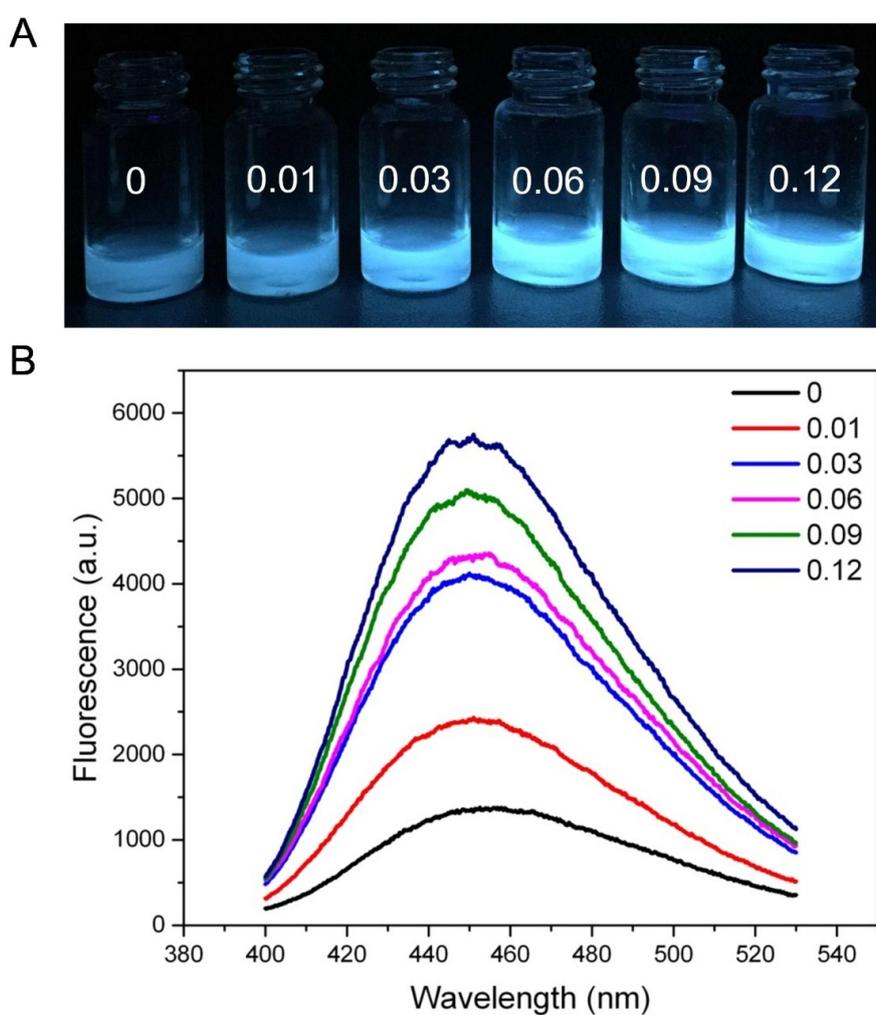


Figure S5. (A) The fluorescence images of C-dots assembled in different Gd³⁺ ion concentrations ($R_{[Gd^{3+}]/[TRP]} = 0, 0.01, 0.03, 0.06, 0.09, 0.12$). (B) The photoemission spectra of C-dots assembled in different Gd³⁺ ion concentrations ($R_{[Gd^{3+}]/[TRP]} = 0, 0.01, 0.03, 0.06, 0.09, 0.12$).

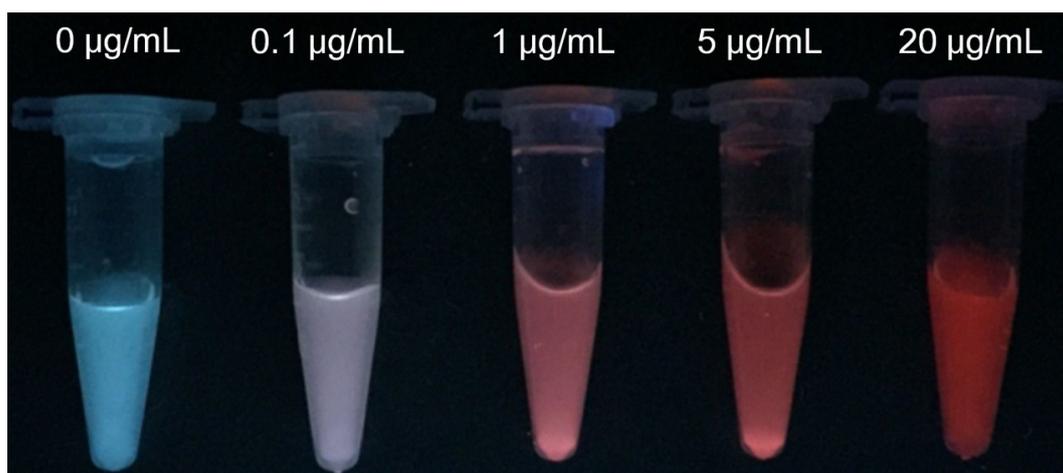


Figure S6. The fluorescence images of the C-dots assemblies loaded with drugs at a series of concentrations under UV excitation (365 nm).

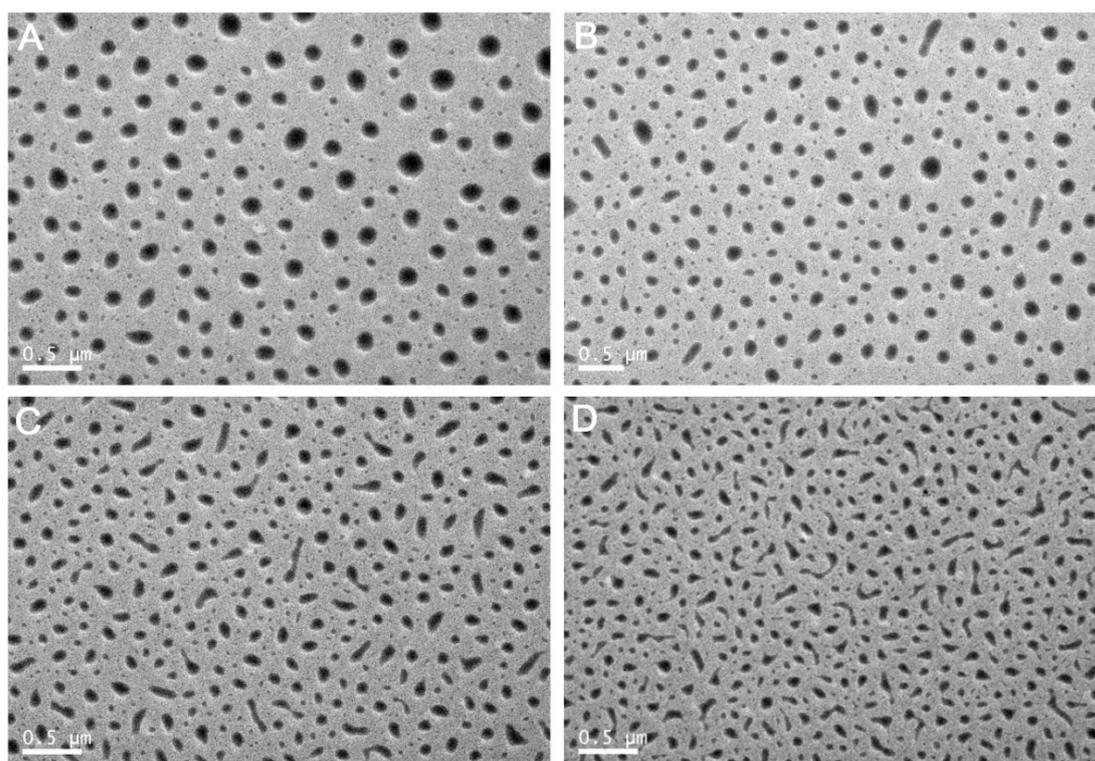


Figure S7. The effects of pH value on the stability of A-C-dots. The TEM images of A-C-dots dispersed in water with different pH values for 12 h. (A) 7.4, (B) 6.0, (C) 5.0, (D) 3.0.

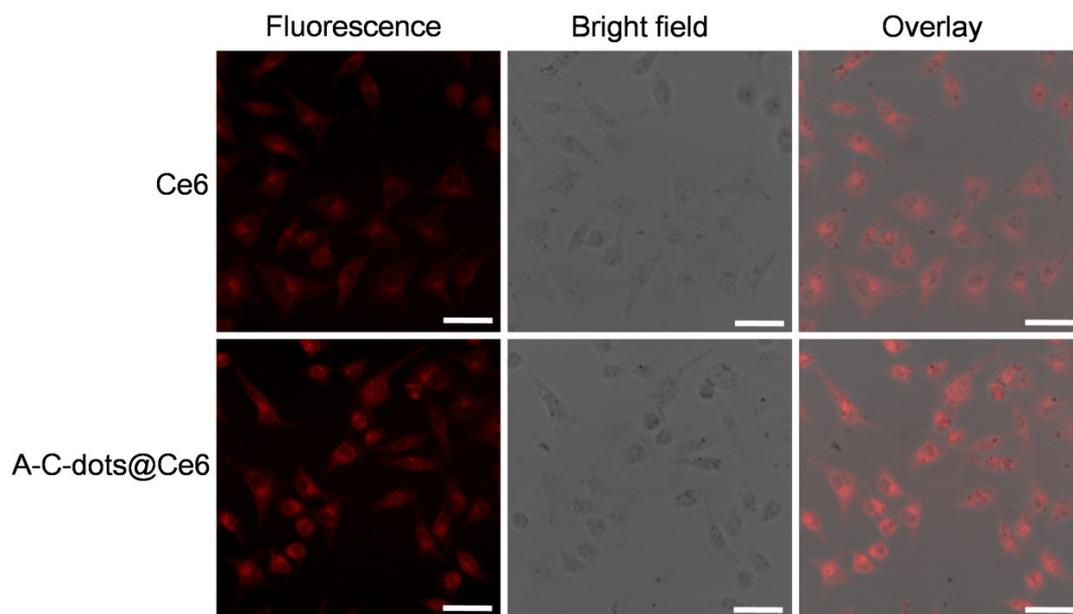


Figure S8. Fluorescence images of A549 cells incubated with free Ce6 and A-C-dots @Ce6 for 24 h with a 540 nm excitation. Scale bars in all images are 25 μ m.

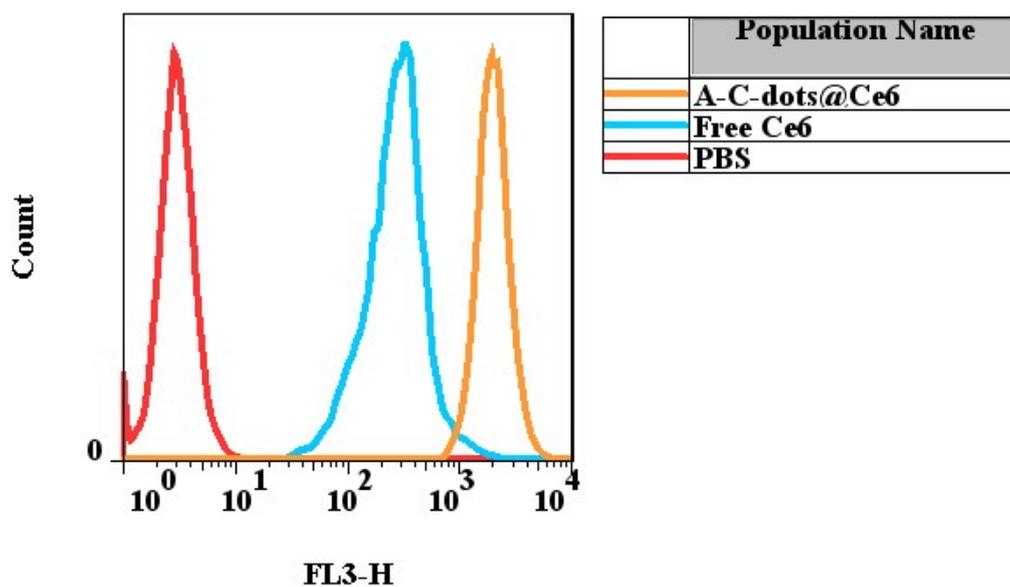


Figure S9. Flow cytometry analysis of the cellular uptake, the A549 cells incubated with free Ce6 and A-C-dots@Ce6 for 24 h, respectively.

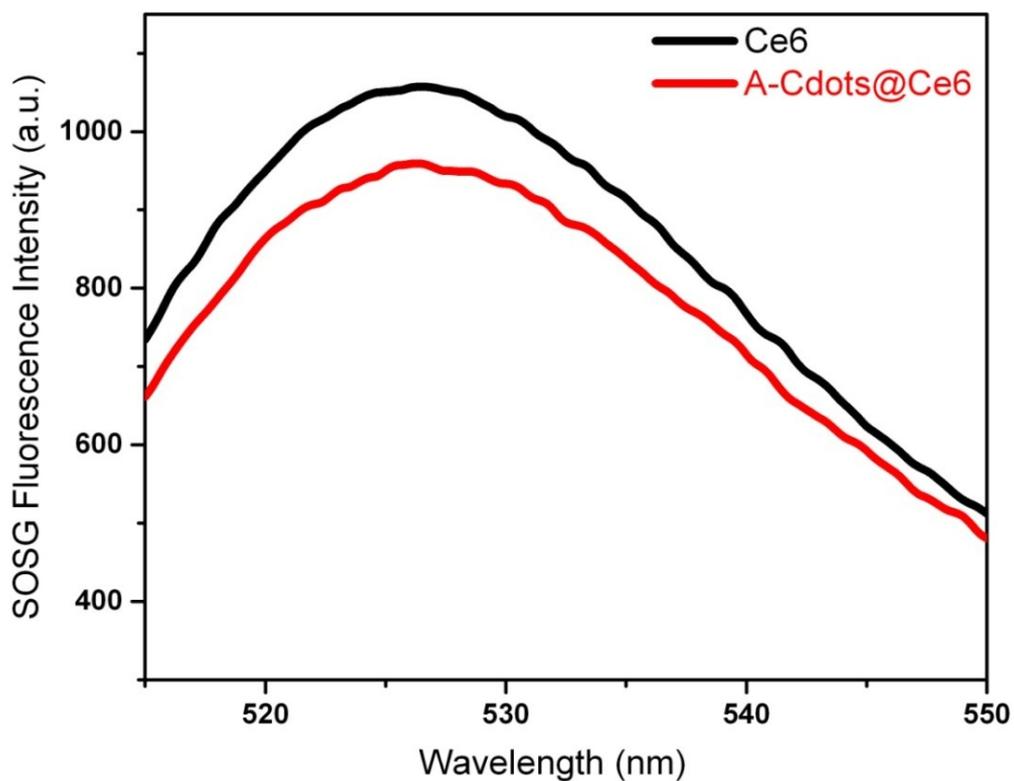


Figure S10. The SOSG fluorescence spectra of free Ce6 and A-C-dots@Ce6 after 633 nm laser irradiation (10 min, 0.5 W/cm²).

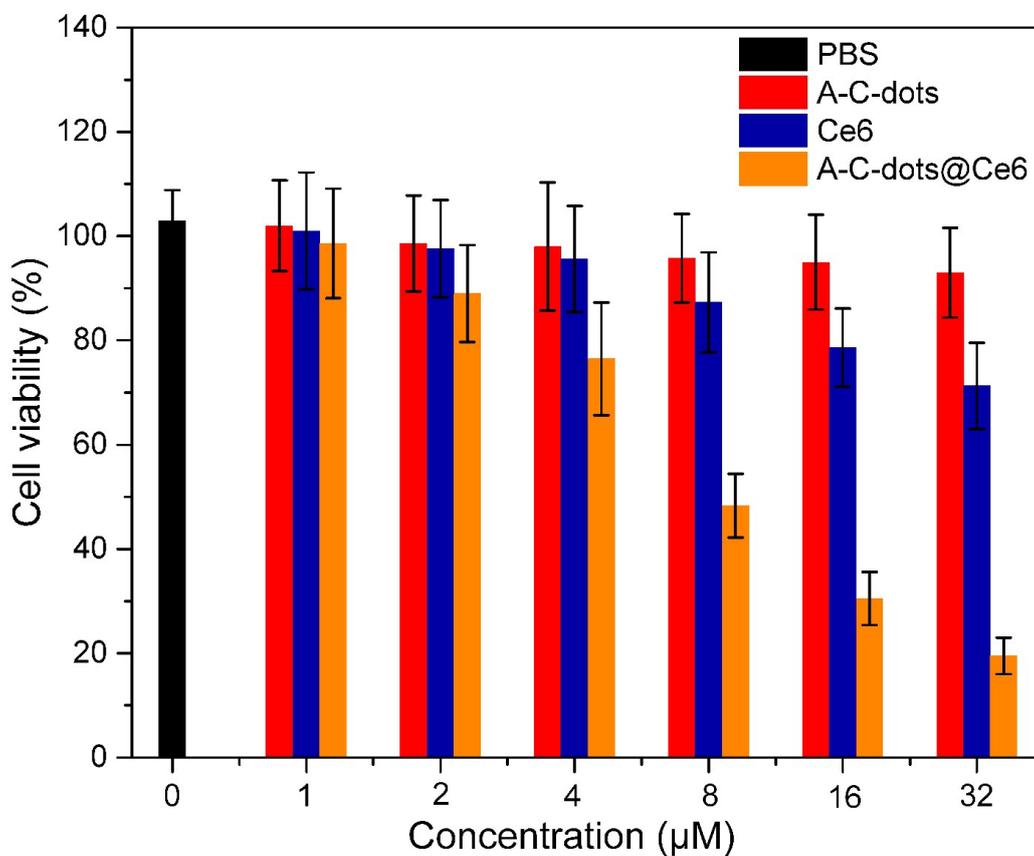


Figure S11. Relative viability of A549 cells incubated with various concentrations of

PBS, A-C-dots, Ce6 and A-C-dots@Ce6 after the irradiation of 633 nm laser, which was determined by CCK-8 assay.

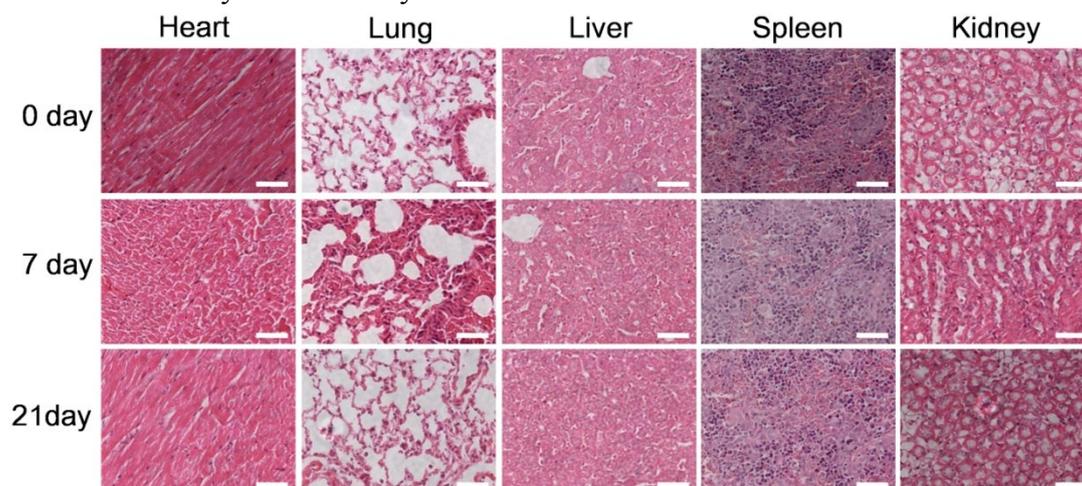


Figure S12. H&E section images of the major organs from the mice after 0, 7, 21 days post-injected with A-C-dots@Ce6. All scales bars are 200 μ m.

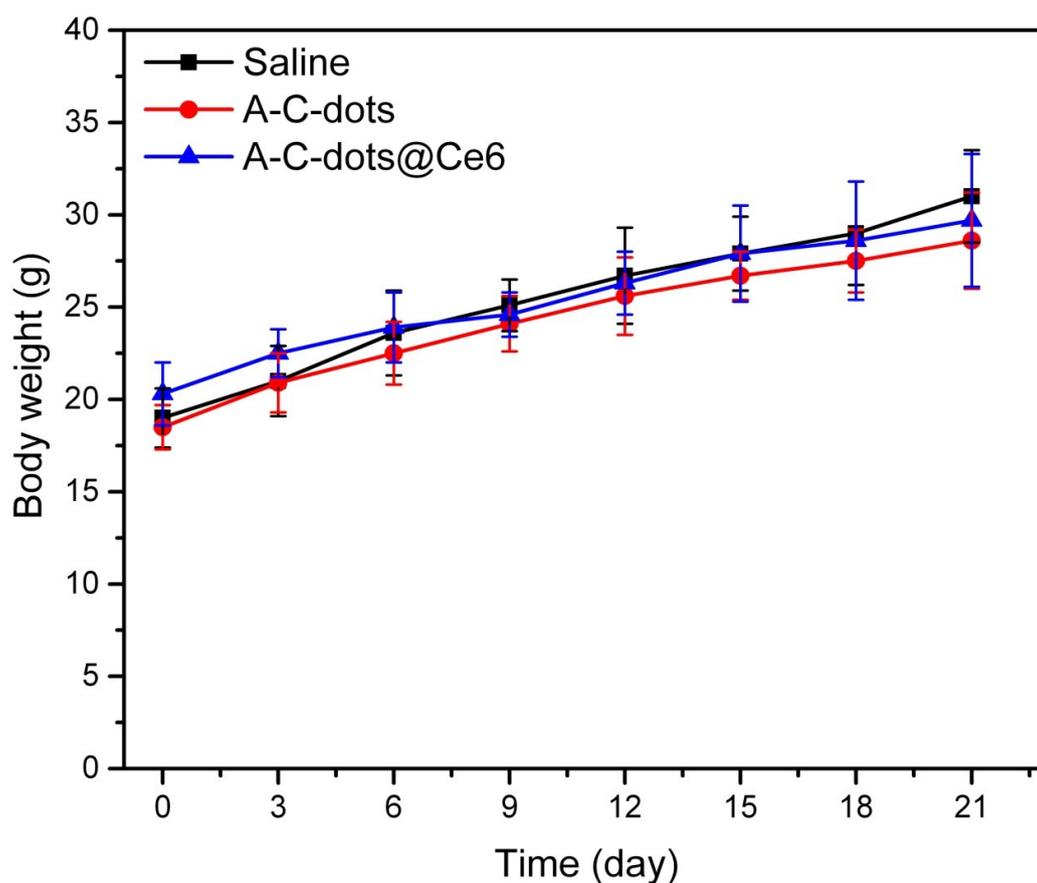


Figure S13. The time-dependent body weight change course of the mice post-injection with the C-dots assembly.

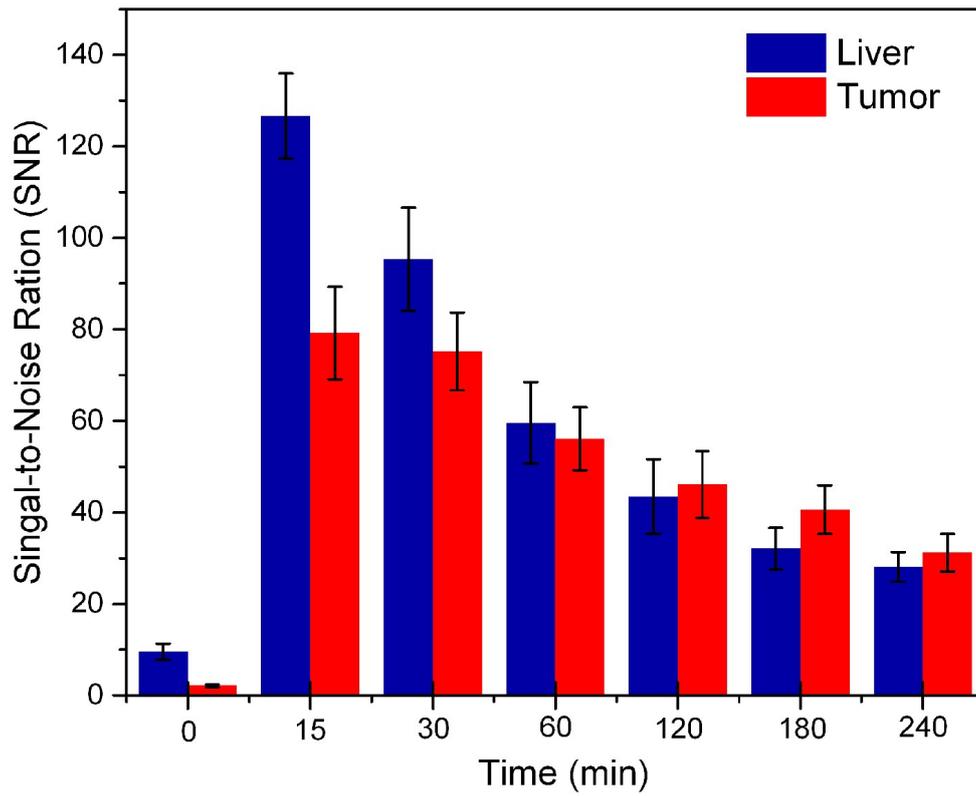


Figure S14. Quantified T1-MR signal from liver and tumor.

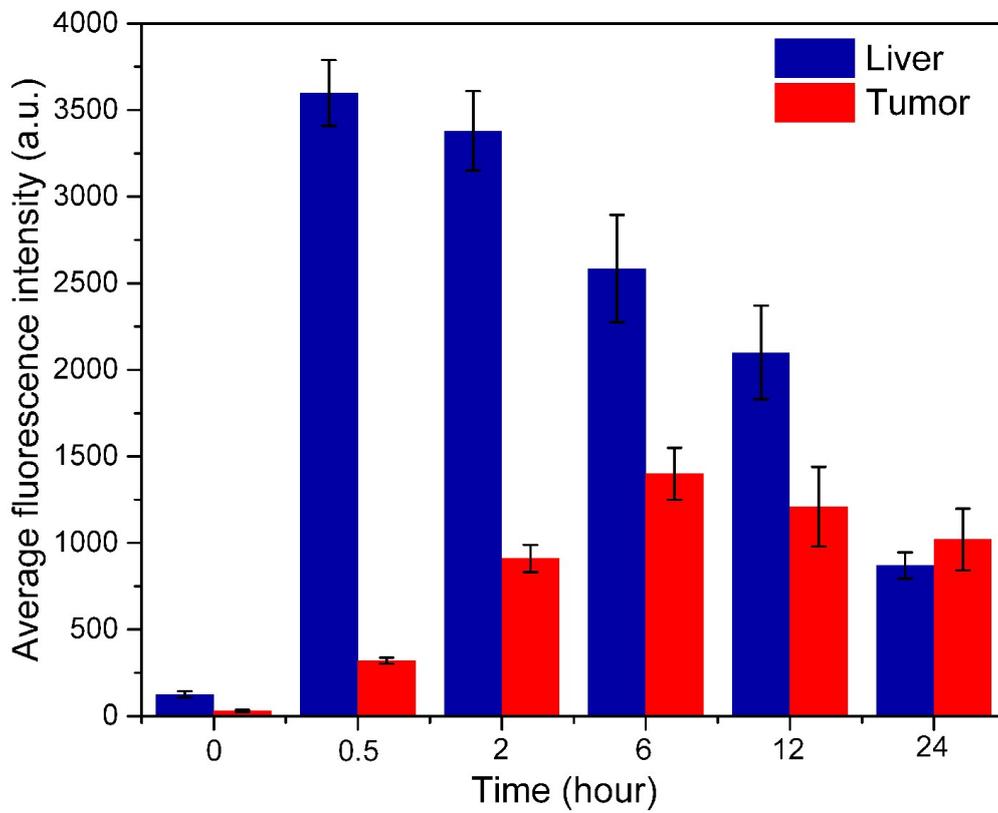


Figure S15. Quantified fluorescence signal from liver and tumor.