

Supporting Information

Rod-shape MSN@MoS₂ Nanoplatform for FL/MSOT/CT

Imaging-Guided Photothermal and Photodynamic Therapy

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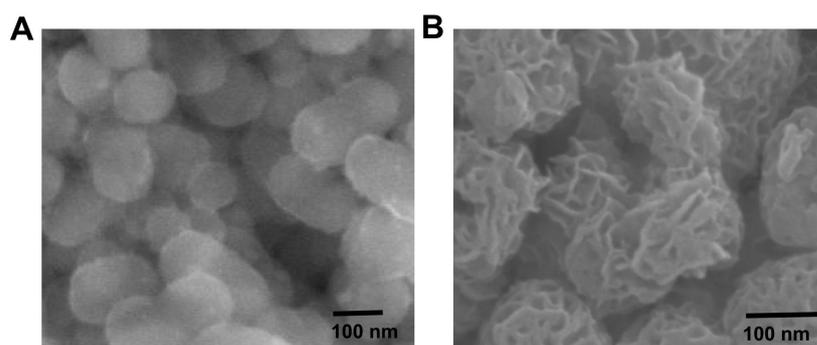


Figure. S1 SEM images of (A) MSNR and (B) MSNR@MoS₂.

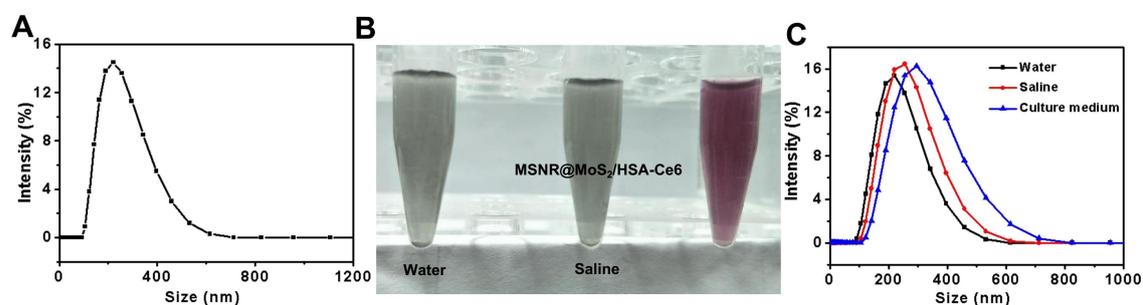


Figure. S2 (A) Size distribution profile of MSNR@MoS₂-HSA/Ce6. (B) Digital photos of MSNR@MoS₂-HSA/Ce6 in distilled water, saline, and culture medium after 24 h. (C) DLS of MSNR@MoS₂-HSA/Ce6 dispersed in distilled water, saline, and culture medium after 24 h.

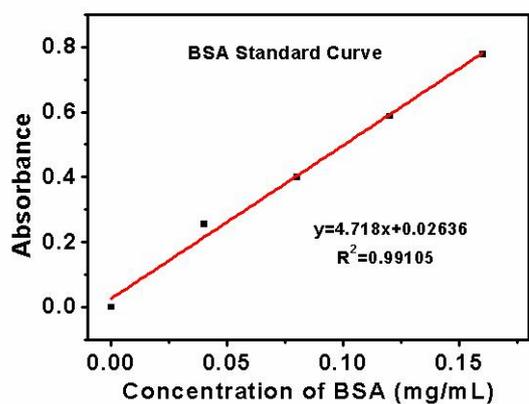


Figure. S3 The standard curve of BSA.

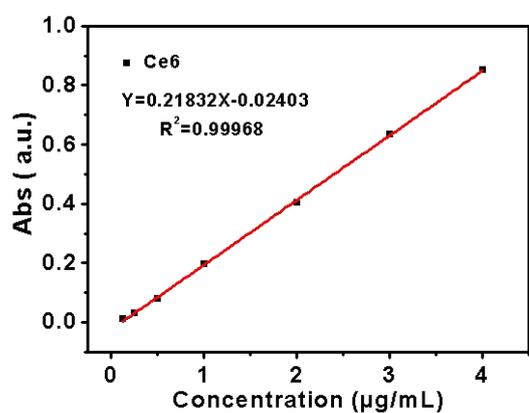


Figure. S4. The standard curve of free Ce6.

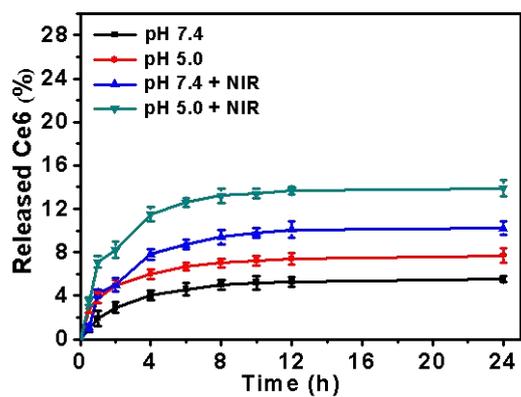


Figure. S5. The Ce6 release profiles from MSNR@MoS₂-HSA/Ce6 in different environments.

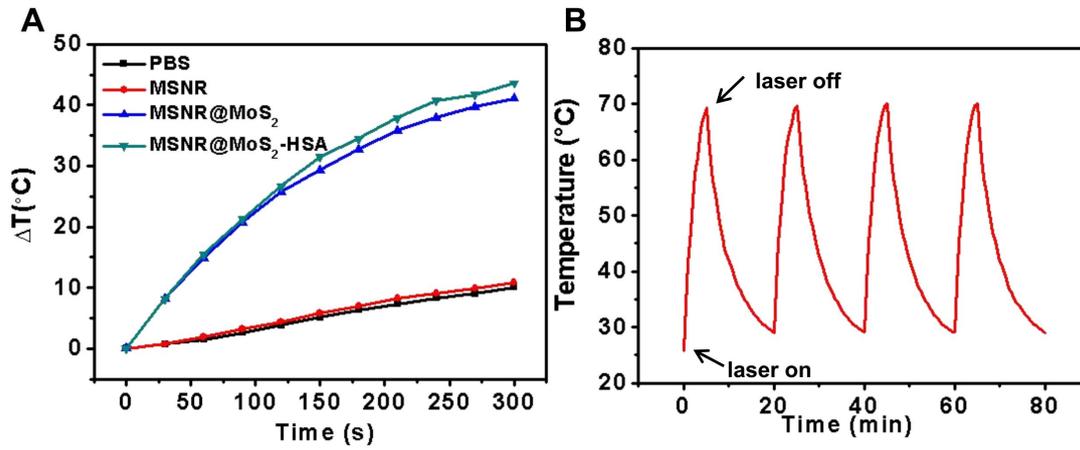


Figure. S6 (A) Temperature elevations of different formulations over a period of 5 min laser (808 nm, 1.5 W cm²) (B) Temperature curves of MSNR@MoS₂-HSA NPs (200 μg/mL) over four Laser on/ off cycles under 808 nm laser irradiation.

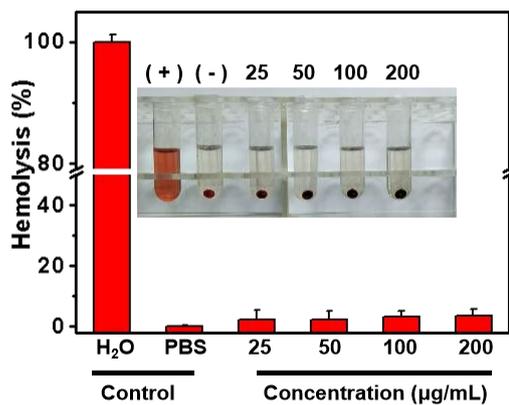


Figure. S7 Hemolysis of MSNR@MoS₂-HSA/Ce6 after incubation with red blood cells at various concentrations (0–200 μg/mL) for 2 h, using PBS and deionized water as a negative and positive control, respectively. Inset: Hemolysis photo after centrifugation.

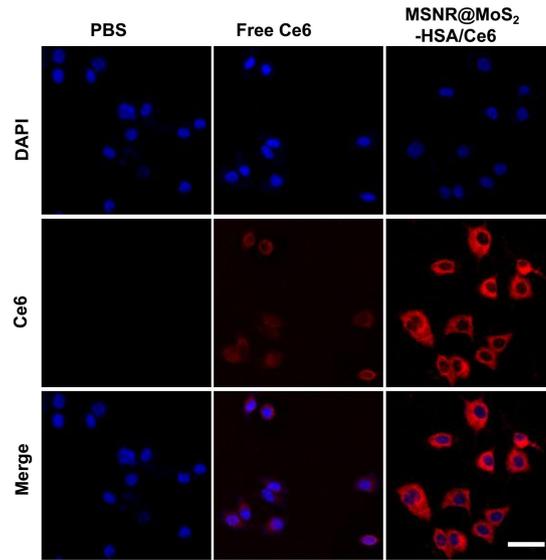


Figure. S8 CLSM images of cells after incubating with different formulations. Scale bars: 50 μ m.

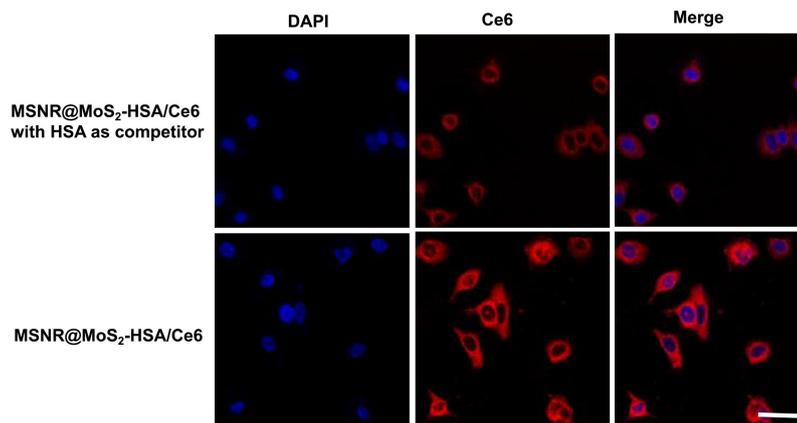


Figure. S9 CLSM images of cells after incubating with MSNR@MoS₂-HSA/Ce6 under the HSA competition. Scale bars: 50 μ m.

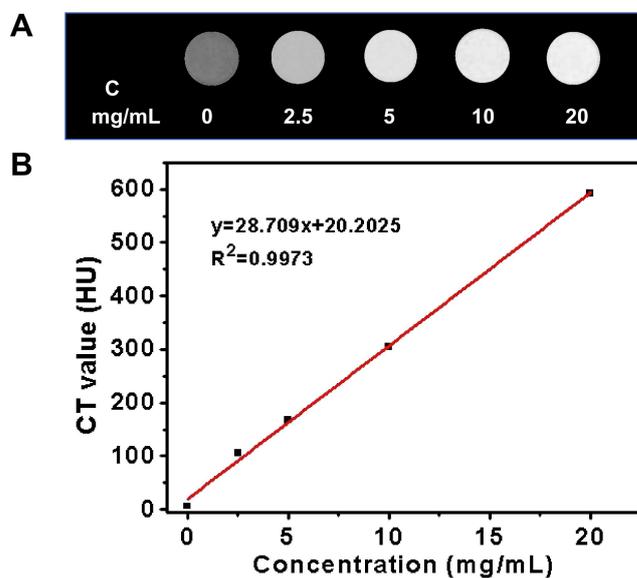


Figure. S10 (A) In vitro CT images of MSNR@MoS₂-HSA/Ce6 at varied concentrations. (B) HU values of MSNR@MoS₂-HSA/Ce6 as the function of its concentrations.

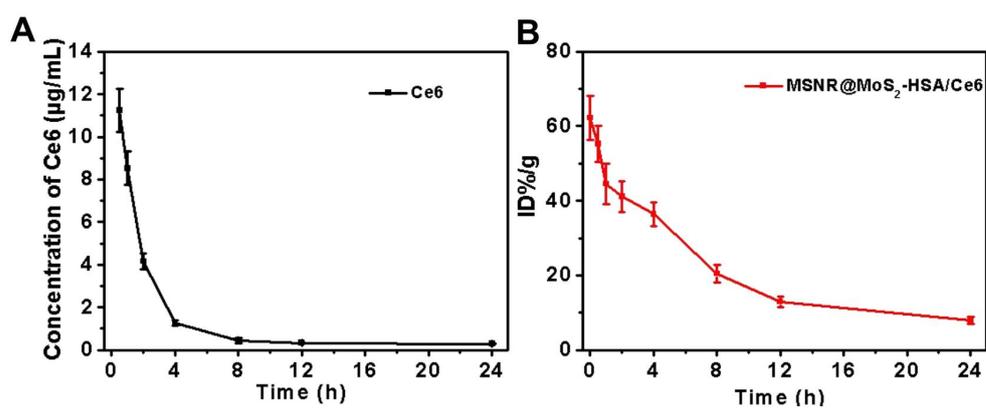


Figure. S11 (A) Pharmacokinetic profiles of free Ce6. (B) The blood circulation of MSNR@MoS₂-HSA/Ce6.

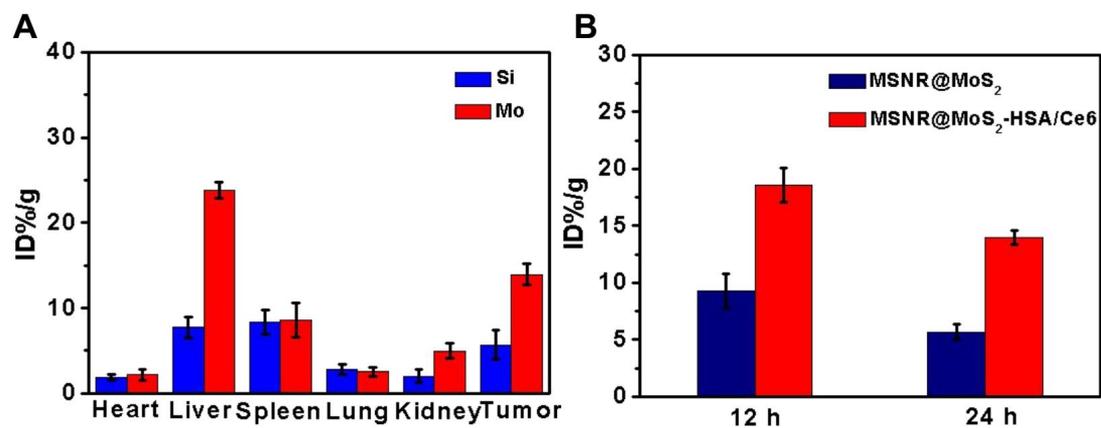


Figure. S12 (A) Biodistribution of MSNR@MoS₂-HSA/Ce6 in mice at 24 h post-injection. The concentration of Si and Mo was measured by ICP-AES (n=3). (B) Time-dependent accumulation of the MSNR@MoS₂ and MSNR@MoS₂-HSA/Ce6 samples at tumor site, respectively.