Supplementary materials

Theranostic Nanodots with Aggregation-Induced Emission Characteristic for Targeted and Image-Guided Photodynamic Therapy of Hepatocellular Carcinoma

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Supplementary Figures

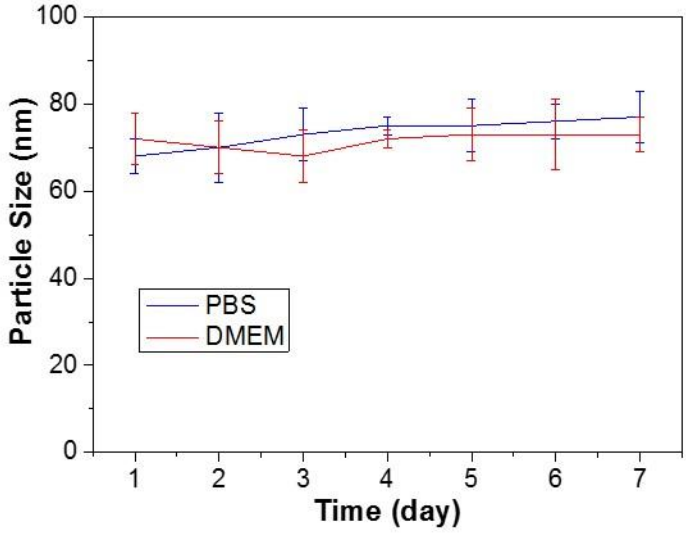

Figure S1. Average hydrodynamic diameter changes of T-TPETS nanodots (1 mg/mL) upon incubation in PBS and DMEM medium at 37°C for 7 days.

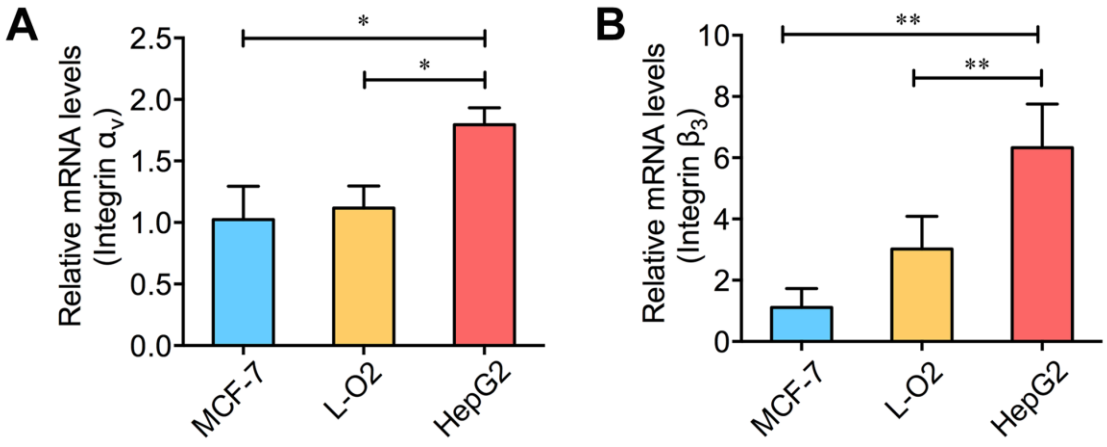

Figure S2. Relative expression of integrin α_v (A) and β_3 (B) mRNA in MCF-7, L-O2 and HepG2 cells. All data are expressed as mean ± SD. *P < 0.05, **P < 0.01.

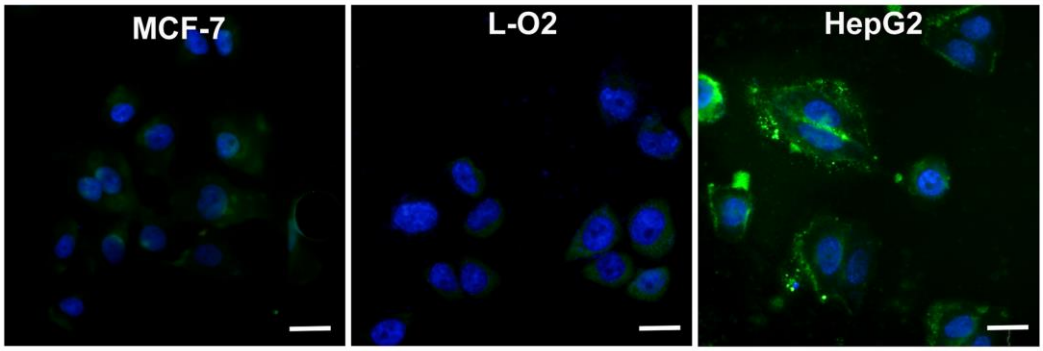

Figure S3. Representative immunofluorescence images stained for integrin $\alpha_v\beta_3$ (green) and nuclei (blue) in MCF-7, L-O2, and HepG2 cells. Scale bar: 20 μm.

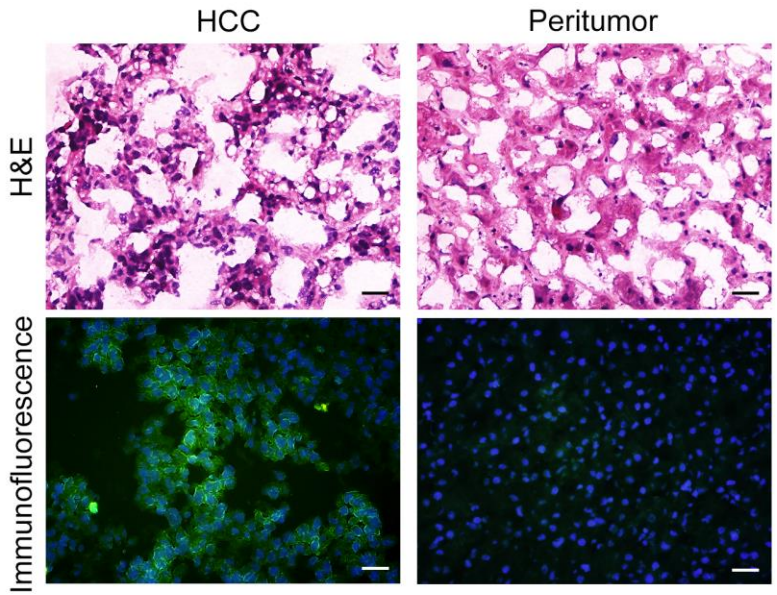

Figure S4. Expression of integrin $\alpha_v\beta_3$ in human hepatocellular carcinoma (HCC) specimen. Typical H&E stain and integrin $\alpha_v\beta_3$ expression of tumor and peripheral non-tumor tissues. Green fluorescence labeled the integrin $\alpha_v\beta_3$ and blue fluorescence labeled the nuclei. Scale bar: 50 μm.

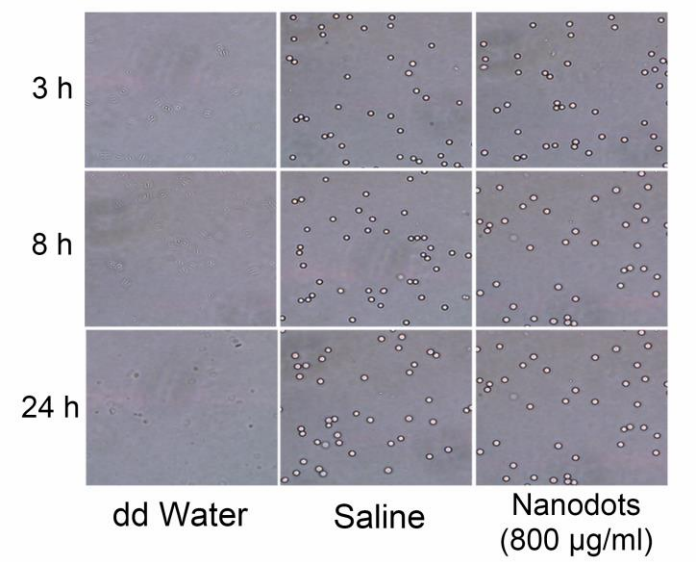

Figure S5. Optical microscopic observation of the dispersion states of the erythrocytes after incubated with distilled water, saline and T-TPETS nanodots for 3 h, 8 h and 24 h.

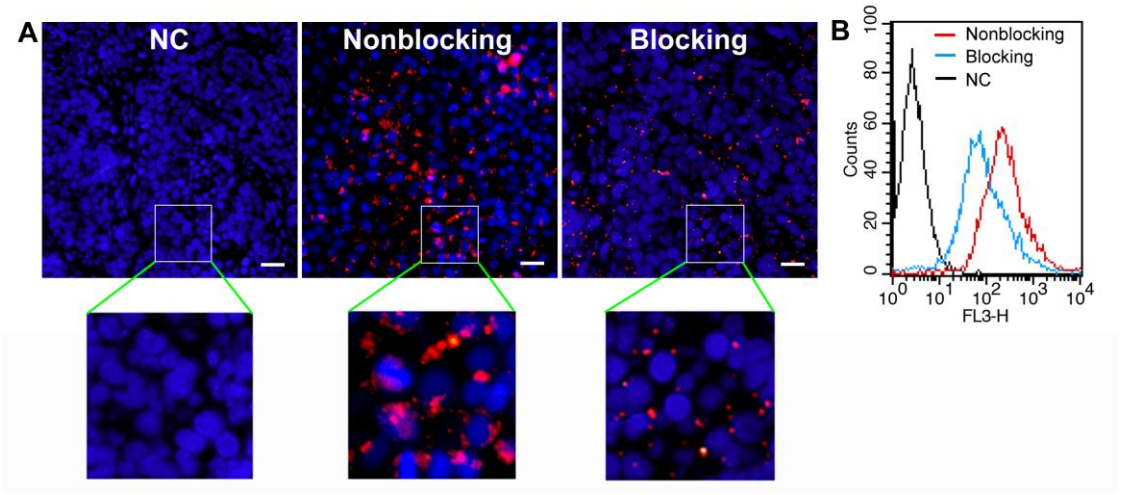

Figure S6. Intratumoral microdistribution of nanodots in tumor-bearing mice with or without blocking the integrin $\alpha_v\beta_3$ receptor. (A) Fluorescence images of tumor section from mice injection with saline (negative control), nanodots (nonblocking), and cilengitide plus nanodots (Blocking). Red fluorescence from the nanodots, and blue fluorescence labeled the nuclei. Scale bar: 50 μm. (B) Flow cytometric analysis of cells obtained from disaggregated tumors 12 h after injection.

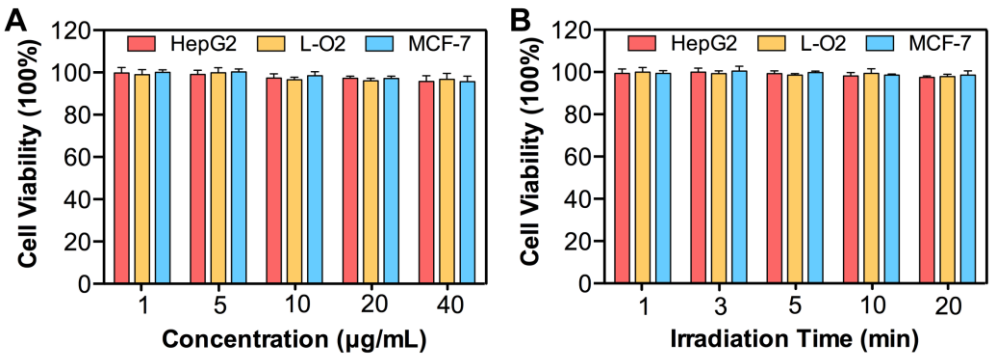

Figure S7. Cell viability after incubation with different concentrations of nanodots in dark or cells upon various irradiation durations without nanodots incubation. (A) Viability of HepG2, L-O2, and MCF-7 cells incubated with different concentrations of nanodots in dark for 24 h. (B) Viability of HepG2, L-O2, and MCF-7 cells upon various irradiation durations (450 nm, 250 mW/cm^2) in the absence of nanodots.

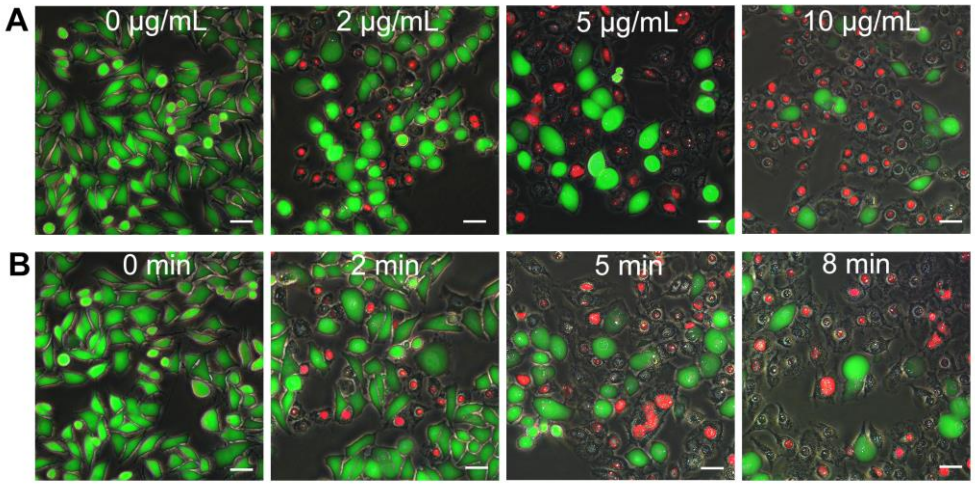

Figure S8. Representative images of randomly selected microscopic fields of HepG2 cells stained with calcein-AM/PI 12 h after various treatments. (A) Cells were incubated with increasing concentration of nanodots, followed by 3 min irradiation (450 nm, 250

mW/cm^2). (B) Cells pretreated with 5 μg/mL nanodots were then subjected to different irradiation time. Scale bar: 20 μm.

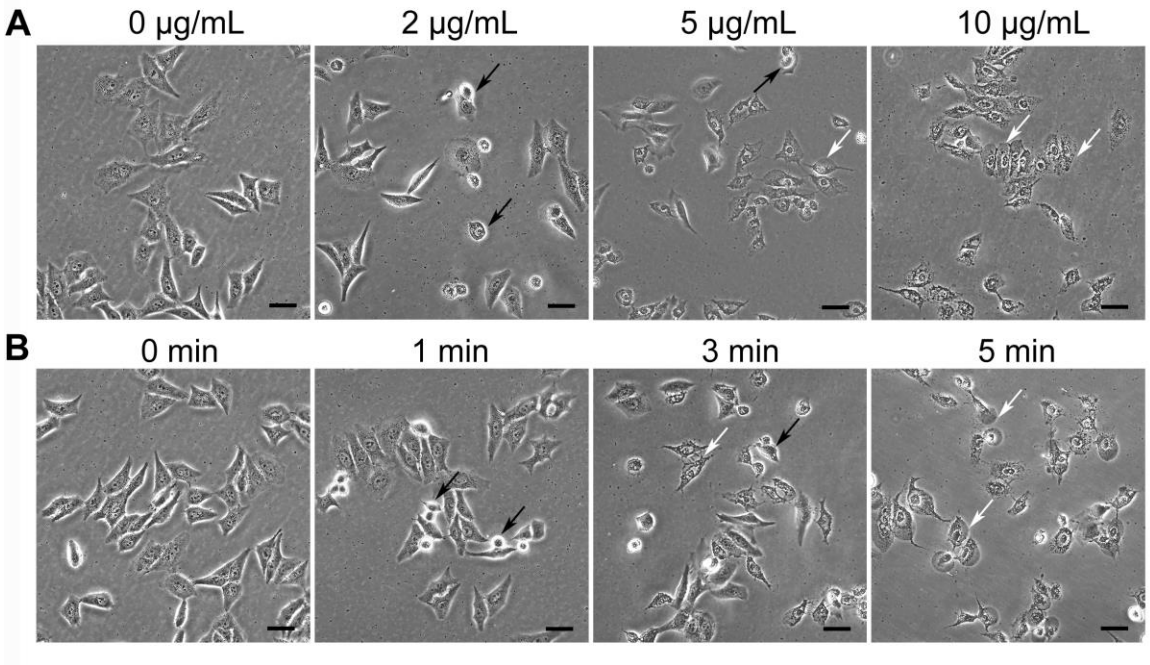

Figure S9. Morphological changes of HepG2 cells 12 h after various treatments. (A) HepG2 cells were pretreated with indicated concentration then subjected to laser irradiation (450 nm, 250 mW/cm^2) for 3 min. (B) Cells pretreated with nanodots with 5 μg/mL were then subjected to different irradiation time. Scale bar: 50 μm. Black arrows: shrinking cell. White arrows: swelling cells.

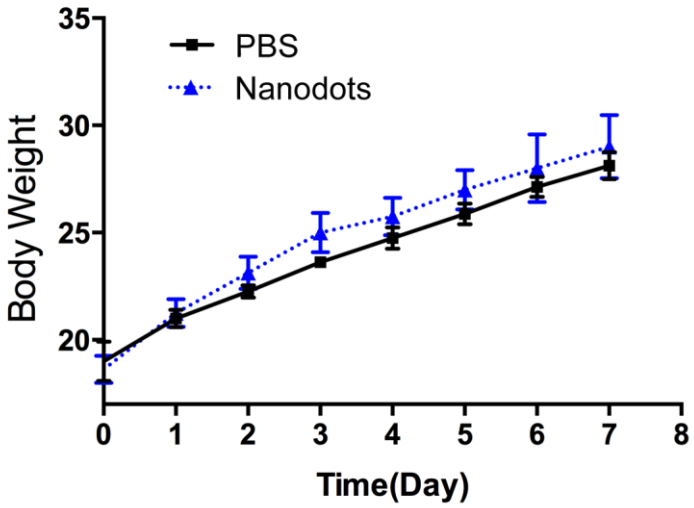

Figure S10. Changes in body weight after injection of PBS or nanodots.

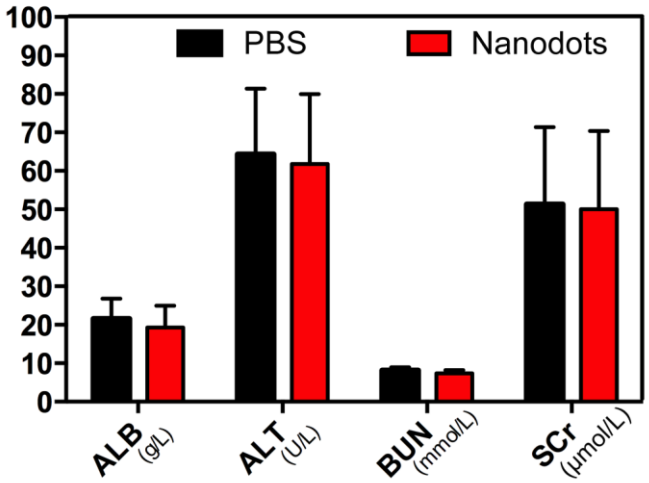

Figure S11. Blood biochemistry test of the two groups of mice injected with saline and T-TPETS nanodots.

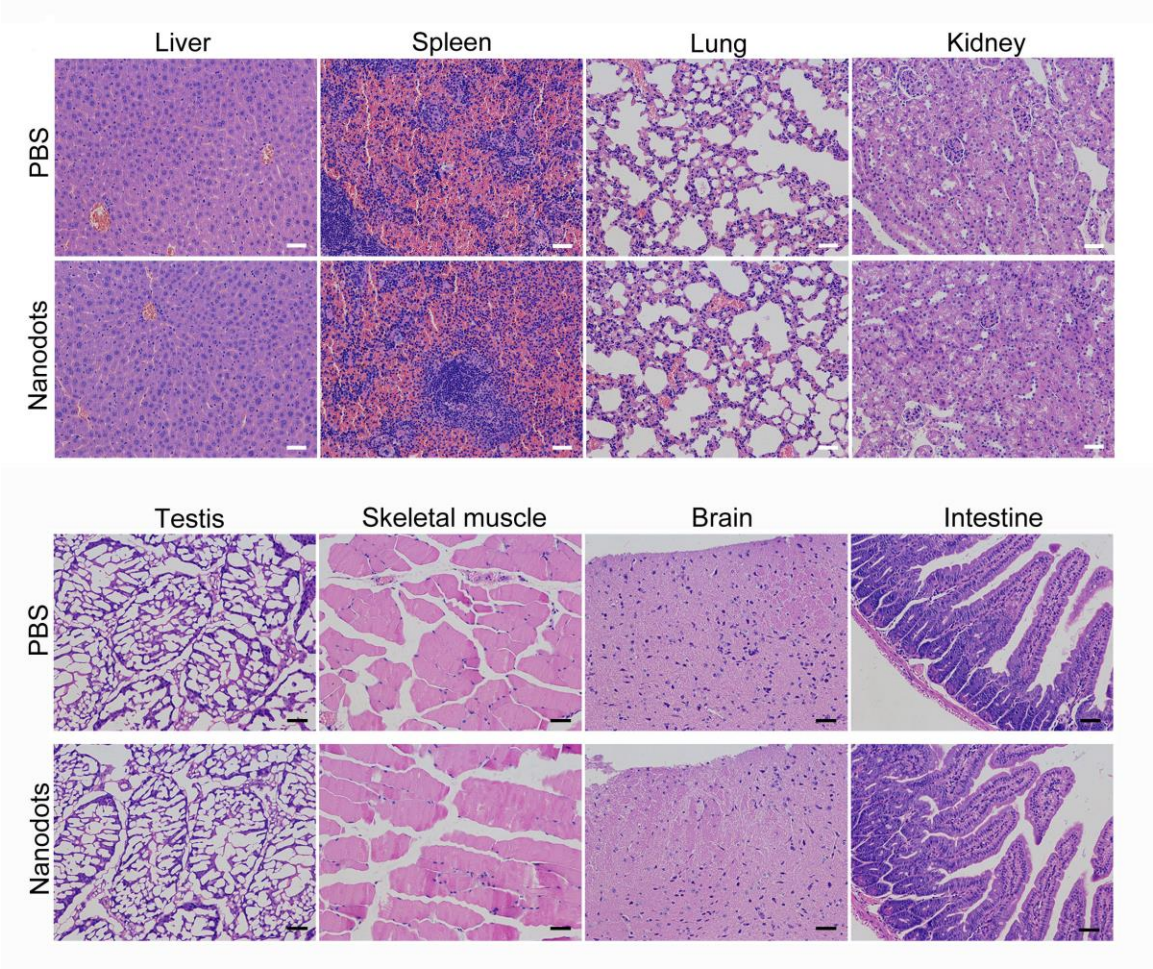

Figure S12. Images of H&E stained various organ slices from mice 7 days after different treatments. Scale bar: 100 μm.