Supporting Information

Near-infrared light triggered photodynamic therapy in combination with gene therapy using upconversion nanoparticles for effective cancer cell killing

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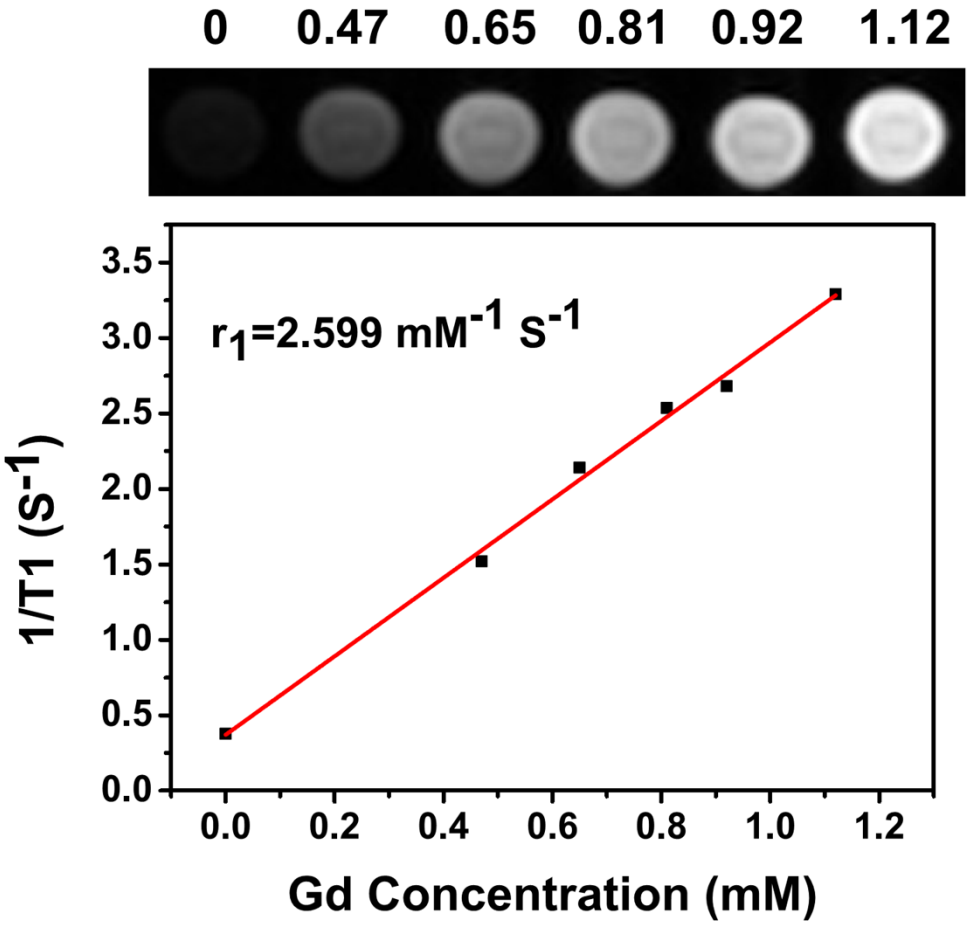
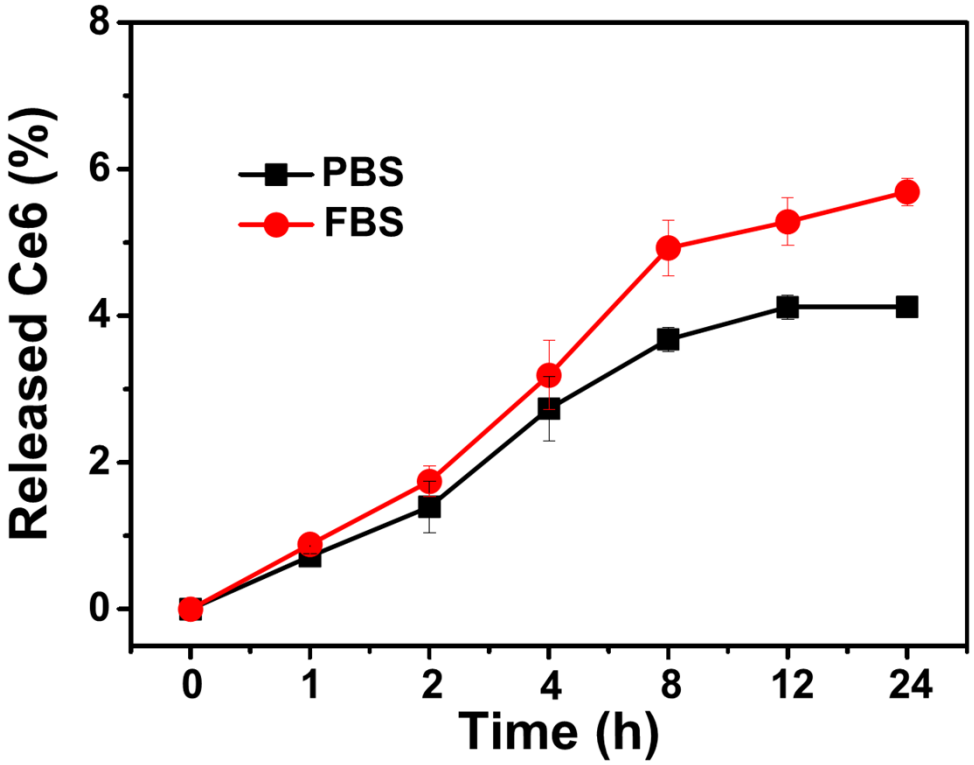
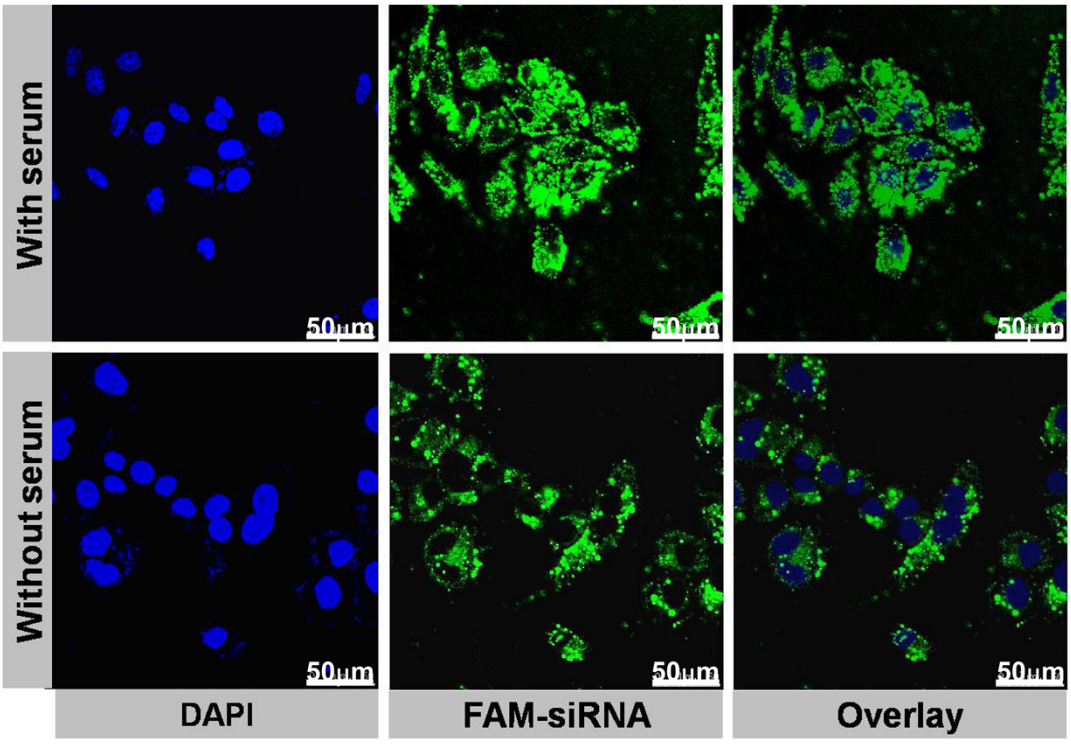


Supporting Figure S1. T1-weighted MR images and T1 relaxation rate (r_1) of UCNP-PEG@2xPEI-Ce6 aqueous solutions at different Gd concentrations.

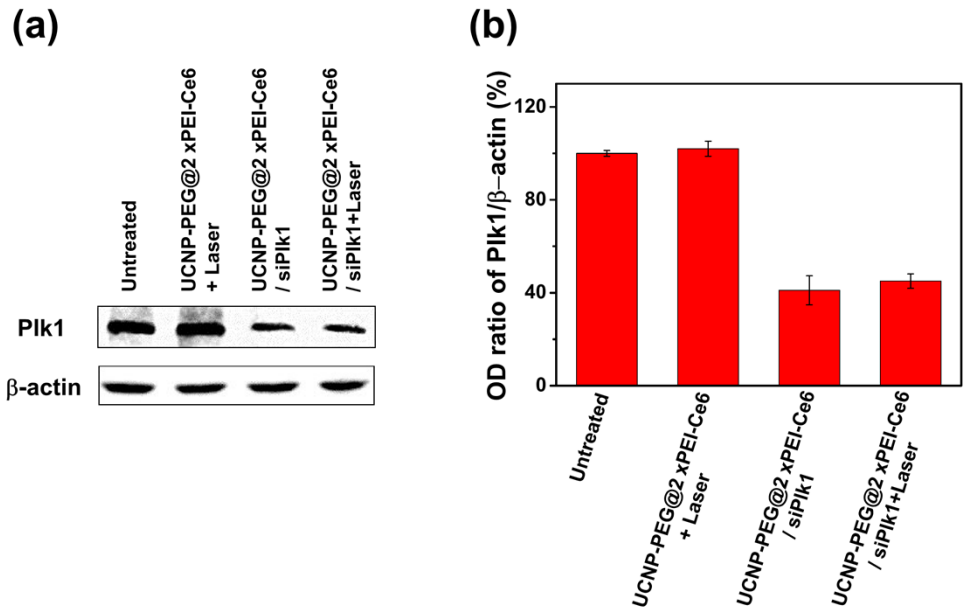


Supporting Figure S2. The release of Ce6 from the UCNP-PEG@2xPEI-Ce6 complex in PBS and FBS. Error bars were based on triplicate samples.

Supporting Figure S3. Gel retardation assay. Agarose gel electrophoresis of bare siRNA, UCNPs and mixtures of UCNP-PEG@2xPEI-Ce6 and siRNA at different N/P ratios. Each sample was incubated at room temperature for 20 minites before electrophoresis.



Supporting Figure S4. Serum-enhanced siRNA transfection. Confocal fluorescent microscope images of HeLa cells incubated with UCNP-PEG@2xPEI-Ce6/ FAM-siRNA (green color for FAM) at the N/P ratio of 20 for 4h under serum-free or serum-containing conditions respectively and stained by DAPI (blue color for DAPI).



Supporting Figure S5. Effect of PDT on siRNA delivery. (a).Western blotting results to determine Plk1 expression of HeLa cells after various treatments indicated. β-actin was also detected as the internal control. (b).Quantitative determination of Plk1 expression for different samples based on Western blotting data from (a). Error bars were based on triplicate samples. Loading of Ce6 and laser-induced PDT showed no significant effect to the RNAi efficacy.