

Supporting Information

Indocyanine green-loaded polydopamine-iron ions coordination
nanoparticles for photoacoustic/magnetic resonance dual-modal imaging-
guided cancer photothermal therapy

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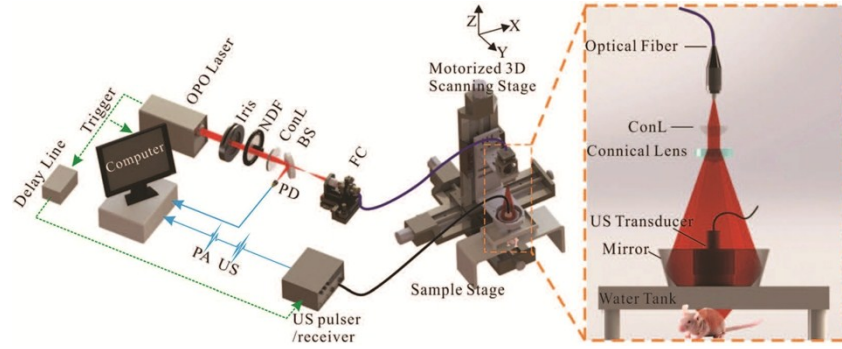


Figure S1. Schematic illustration of the home-made PA imaging system. OPO: optical parametric oscillator; NDF: neutral density filter; BS: beam splitter; PD: photodiode; FC: optical fiber coupler; PA: photoacoustic; US: ultrasound; ConL: convex lens. The system consists of a tunable pulsed OPO laser (Vibrant 355 II HE, Opotek, Carlsbad, USA) for photoacoustic excitation with a wavelength range of 410-2400 nm, a 10MHz focused transducer (V315-SU, Olympus IMS, Waltham, USA; fractional bandwidth: 6MHz; N.A.: 0.4) for both photoacoustic and US signal acquisition, and a precision scanning stage to motorize the imaging head for 2D raster scanning. For data acquisition, the photoacoustic signal was acquired first, and after a custom defined delay time, the ultrasound emission was triggered and the echo signal was subsequently received. Both the photoacoustic and the ultrasound signals were first amplified 39 dB with an ultrasonic pulser-receiver and then digitized with a data acquisition board. For post data processing, the photoacoustic signal was compensated for the laser excitation variation and Hilbert transformed for envelope detection while the ultrasound segment was processed for envelope detection only. The imaging depth of our system is more than 1 cm.

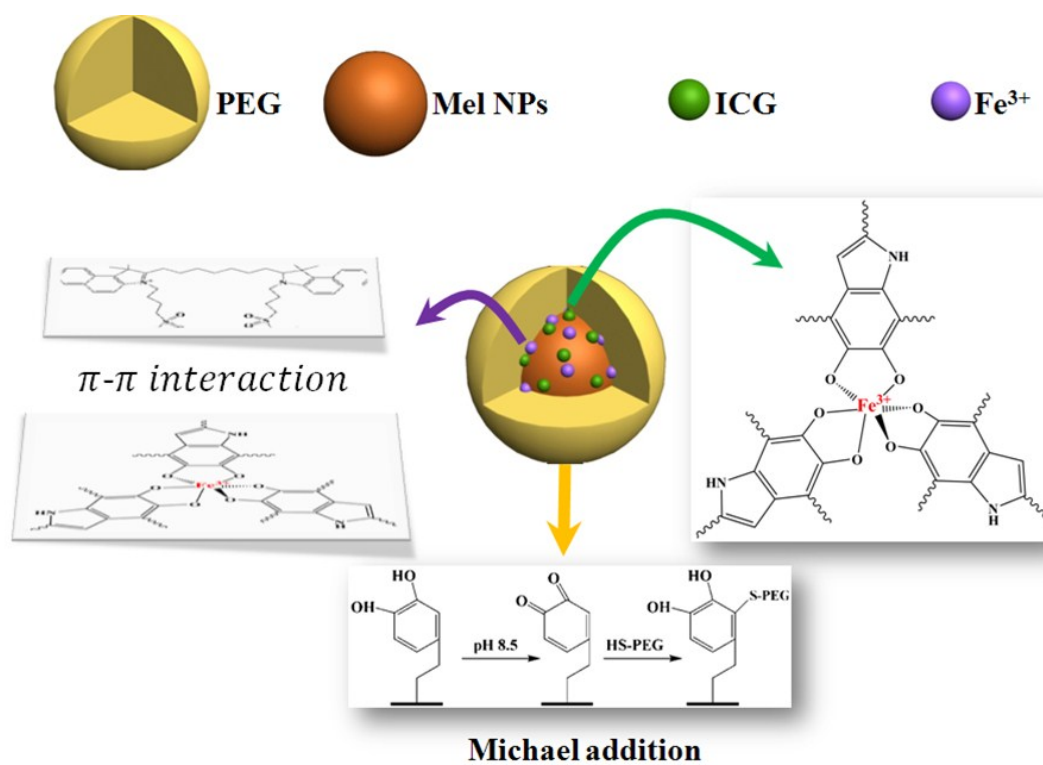


Figure S2. Schematic illustration of the detail formation process of PDA-Fe³⁺-ICG NPs.

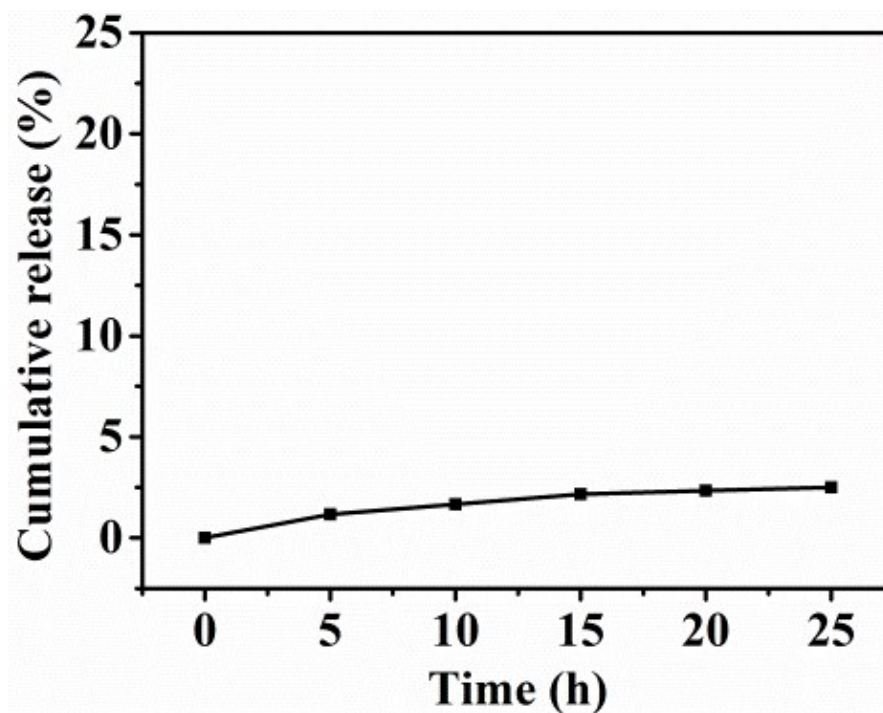


Figure S3. The Fe³⁺ release profile for PDA-Fe³⁺-ICG NPs in PBS (pH 7.4). The concentration of released Fe³⁺ is measured by inductively coupled plasma atomic emission spectroscopy.

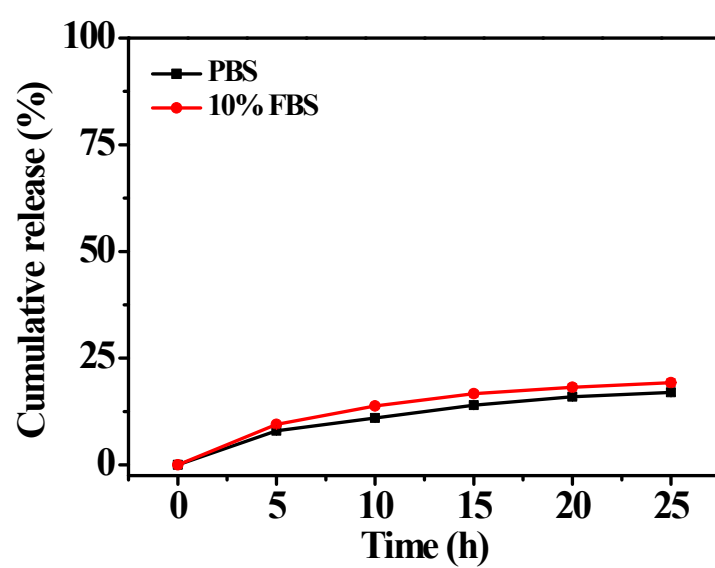


Figure S4. The ICG release profile for PDA-Fe³⁺-ICG NPs in PBS (pH 7.4) and in the presence of 10% FBS.

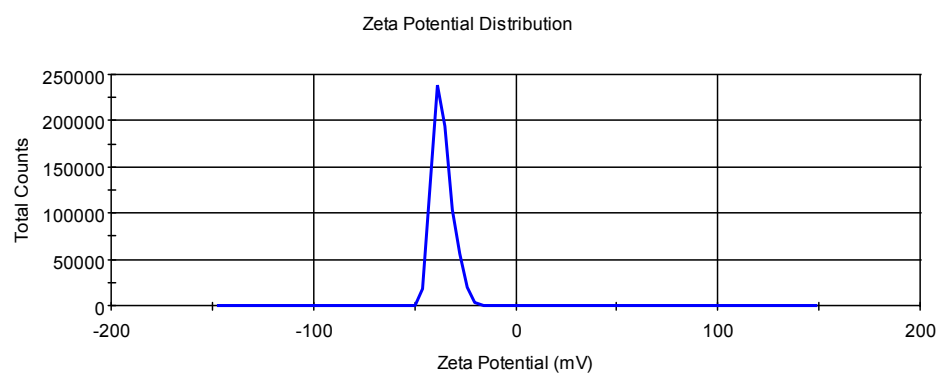


Figure S5. The zeta potential of PDA-Fe³⁺-ICG NPs.

Before irradiation

After irradiation

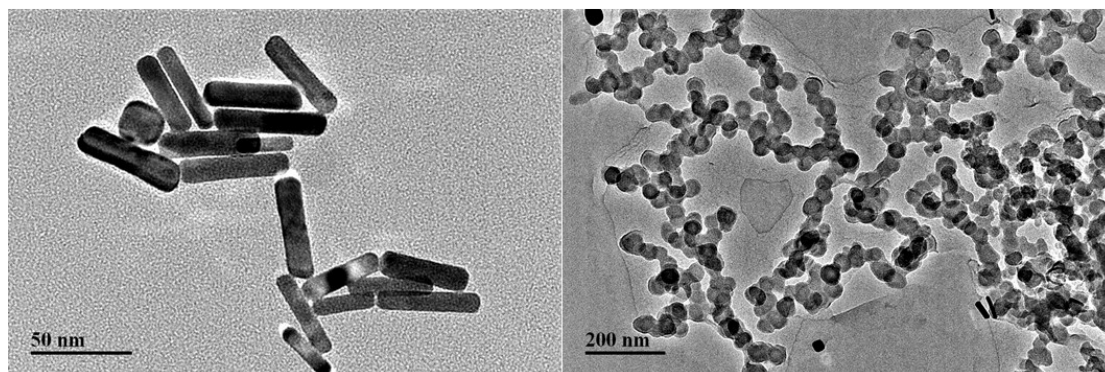


Figure S6. TEM images of gold nanorod before and after NIR laser irradiation (808 nm, $1\text{W}/\text{cm}^2$, 5min).

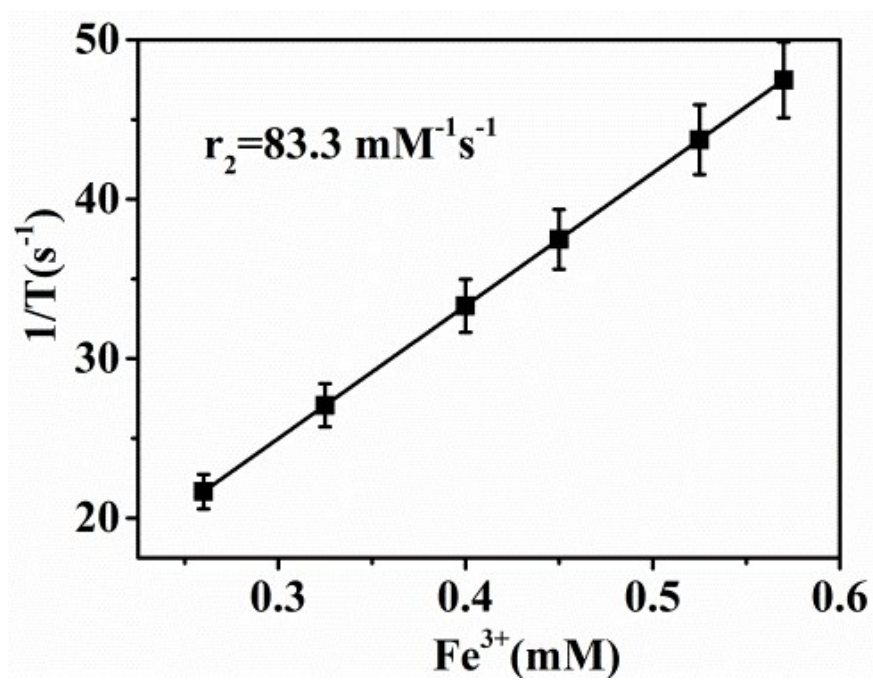


Figure. S7 Plot of $1/T_2$ (s^{-1}) as a function of Fe^{3+} concentration for PDA- Fe^{3+} -ICG NPs. The slope indicated the specific relaxivity ($83.3 \text{ mM}^{-1} \text{ S}^{-1}$).

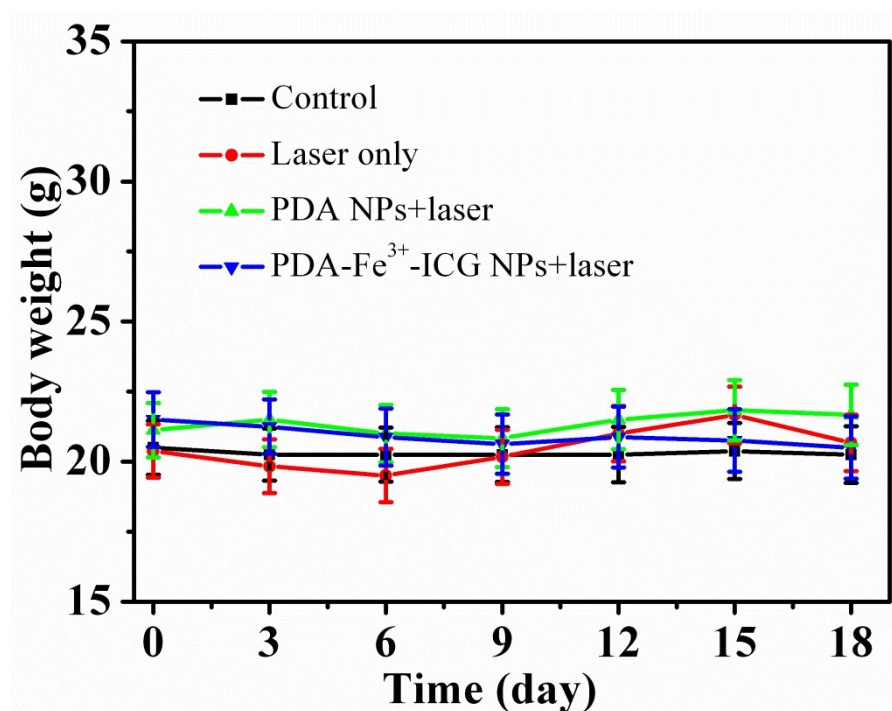


Figure S8. Mice body weight after different treatments during 18 day evaluation period.