Supporting Information

Nano-sized Indocyanine Green J-aggregate as a One-component Theranostic Agent

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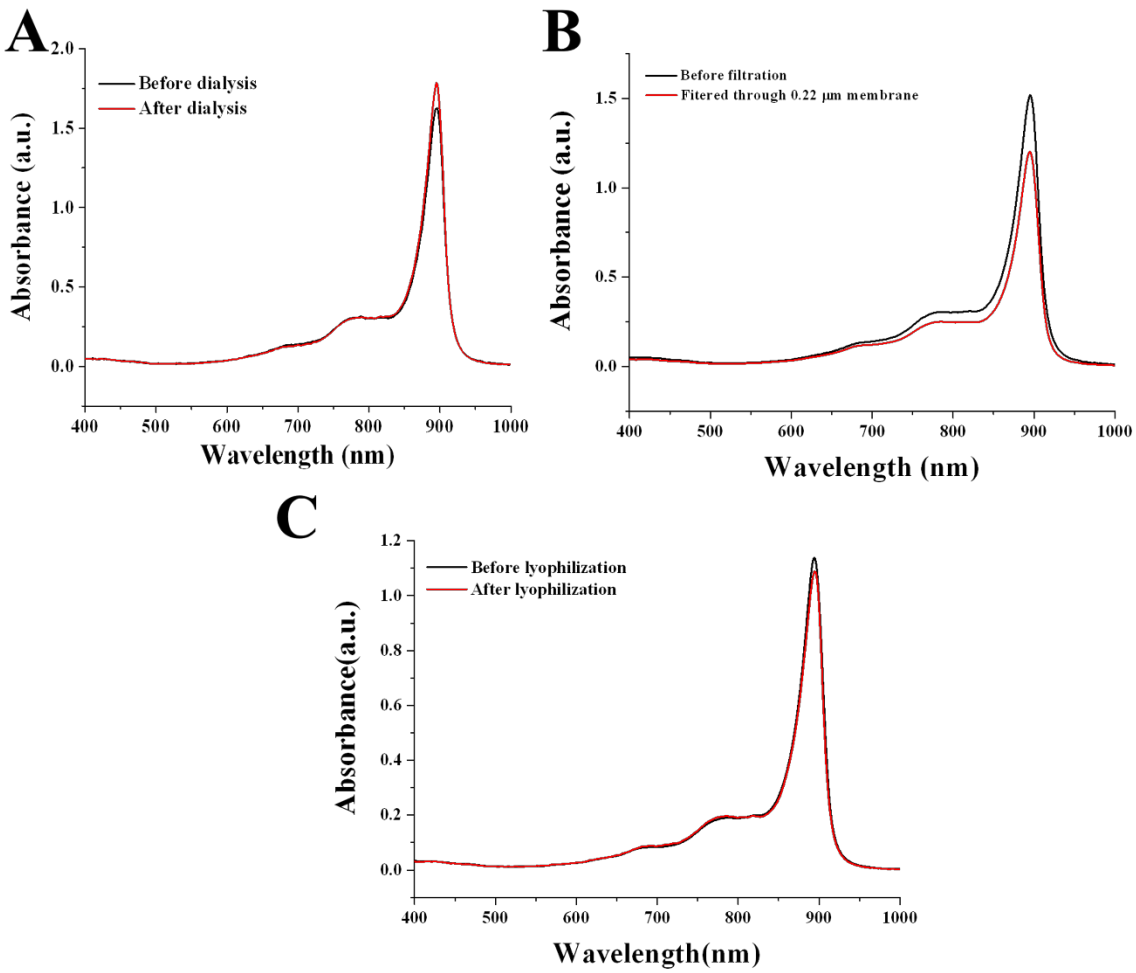

Figure S1 (A) Absorption spectra of IJA before and after dialysis. (B) Absorption spectra of IJA before and after filtration through 0.22 μm membrane. (C) Absorption spectra of IJA before and after lyophilization.

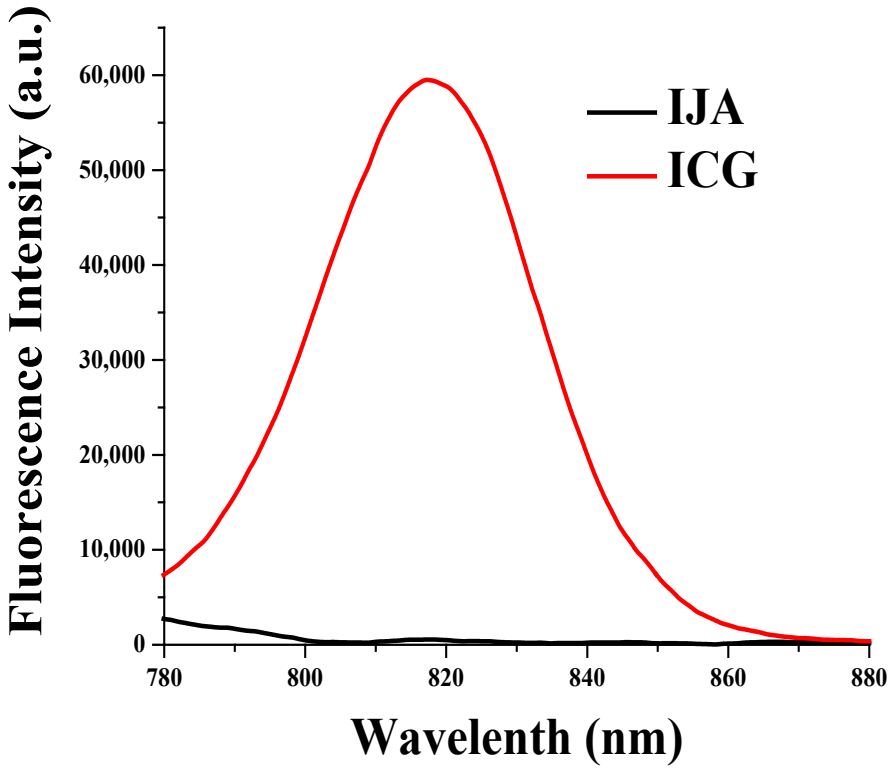

Figure S2 Fluorescence spectra of IJA and free ICG aqueous solution at the concentration.

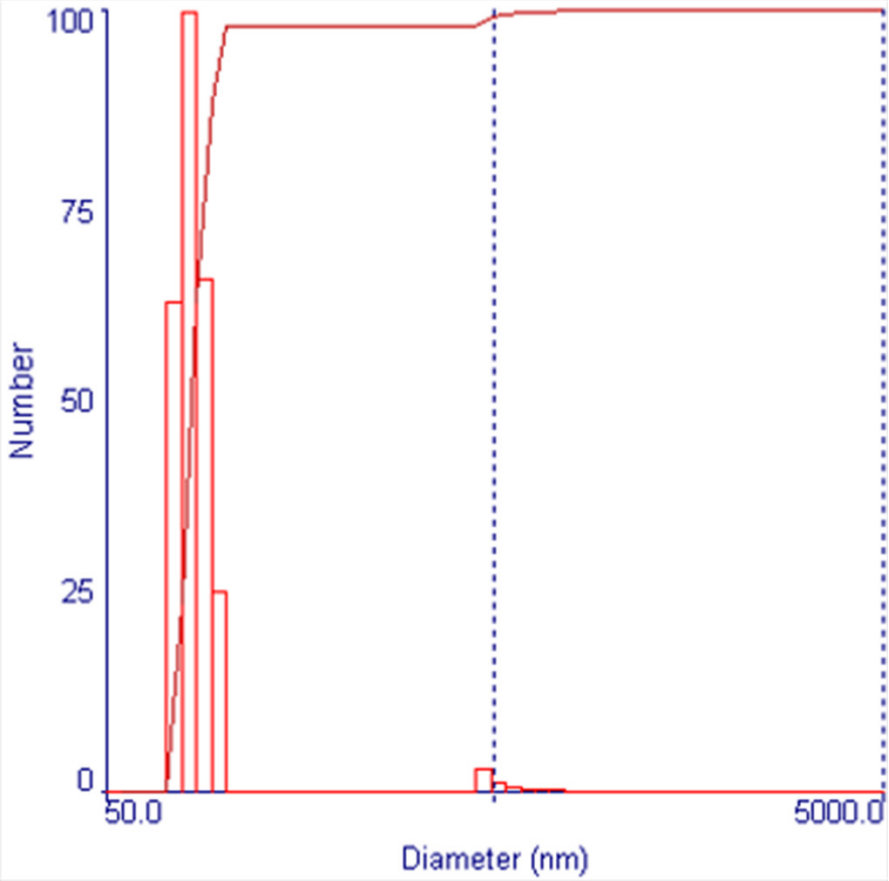

Figure S3 DLS test shows the size distribution of as prepared IJA.

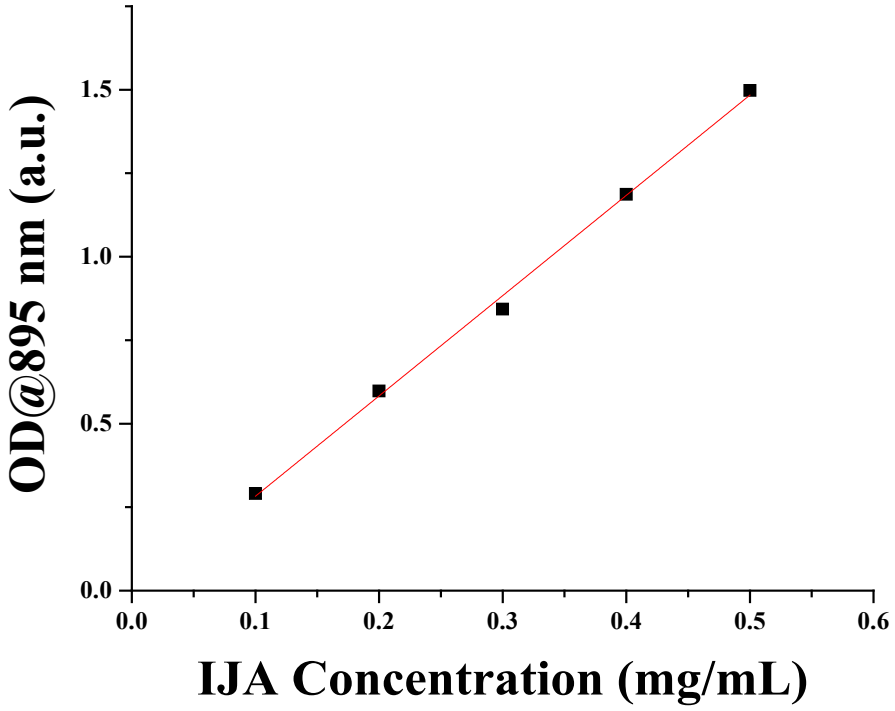

Figure S4 Optical density of IJA at 895 nm changes as a function of the concentration.

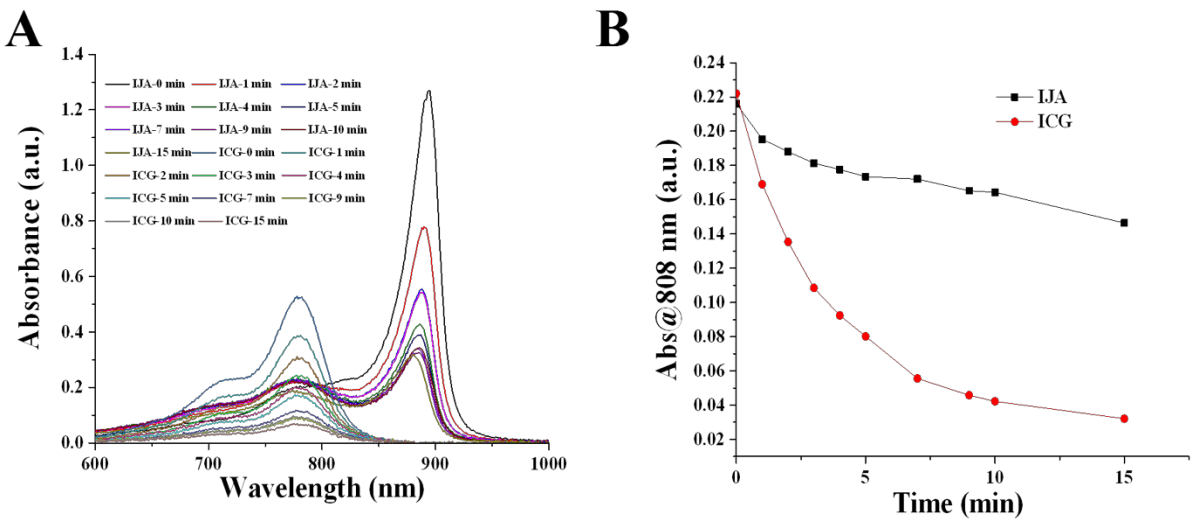

Figure S5 Absorption spectra (A) and absorption at 808 nm (B) of ICG and IJA solution at the concentration of 2.5 μg/mL changed as a function of time irradiated with a 808±5 nm laser at the power of 1 W/cm^2.

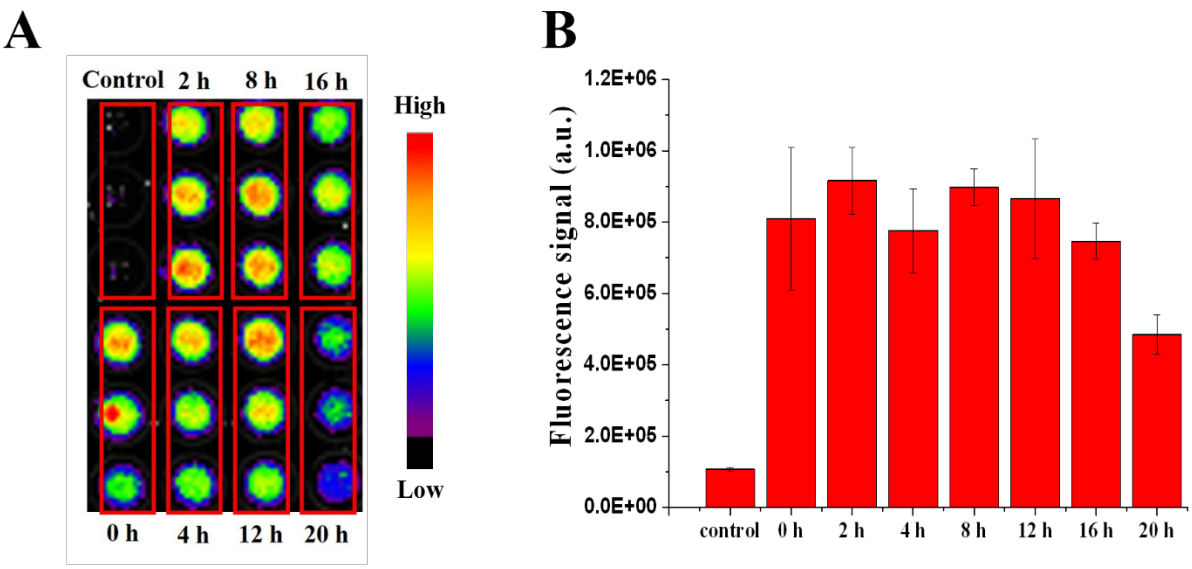

Figure S6 After acquisition of the fluorescence image as Figure 2B, which indicated the fluorescence recovery of IJA, 100 μL DMSO was added into each well to disassociate the ICG aggregates to free ICG. The fluorescence image was acquired (A) and fluorescence intensity for each well was quantified (B). Comparing Figure 2 B&C with Figure S4 A&B, it was found that after incubation with IJA solution for 4 h, some IJA internalized by cells remained in aggregated state (0 h). After incubated in fresh cell culture medium for another 2 h, the fluorescence of ICG were totally recovered and remained relatively constant for several hours, indicating IJA totally disassociated into free ICG in 2 h. After incubated for 16 h, the fluorescence decreased, which can be attributed to the oxidation of ICG in cells.

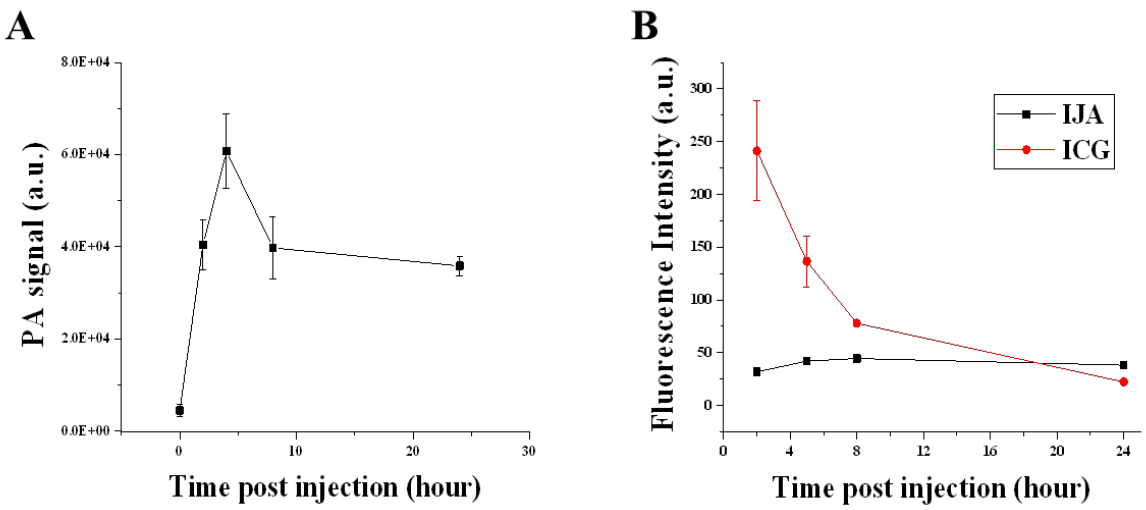

Figure S7 (A) Photoacoustic signal of IJA in tumor changes as a function of time after systematic administration. (B) Fluorescence signal in tumors of IJA and free ICG changes as a function of time post injection

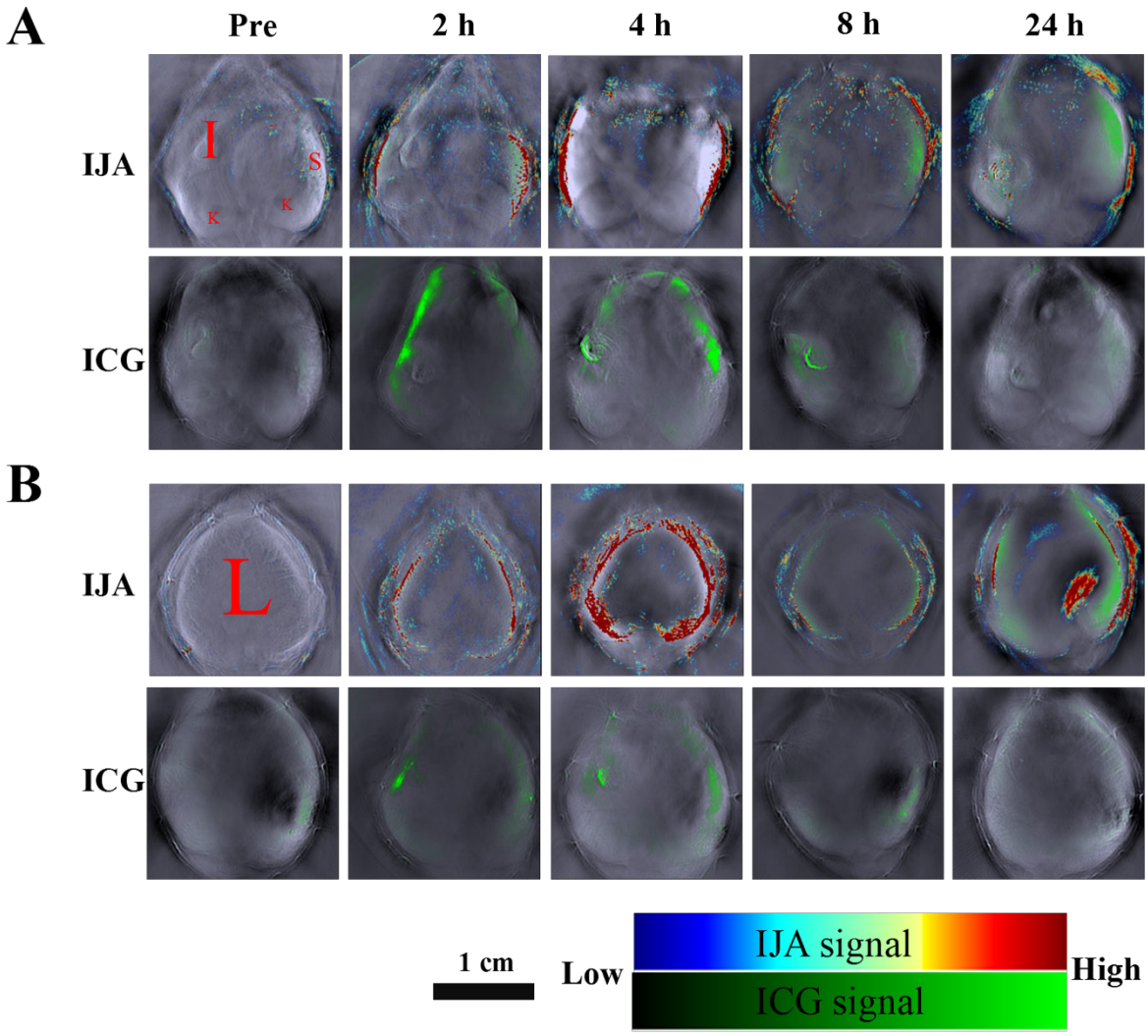

Figure S8 MSOT images acquired after injection of ICG or IJA. (A) Slices indicated the distribution of IJA and ICG in intestines, kidney and spleen. (B) Slices indicated the distribution of IJA and ICG in liver. I, intestines; K, kidney; S, spleen; L, liver.

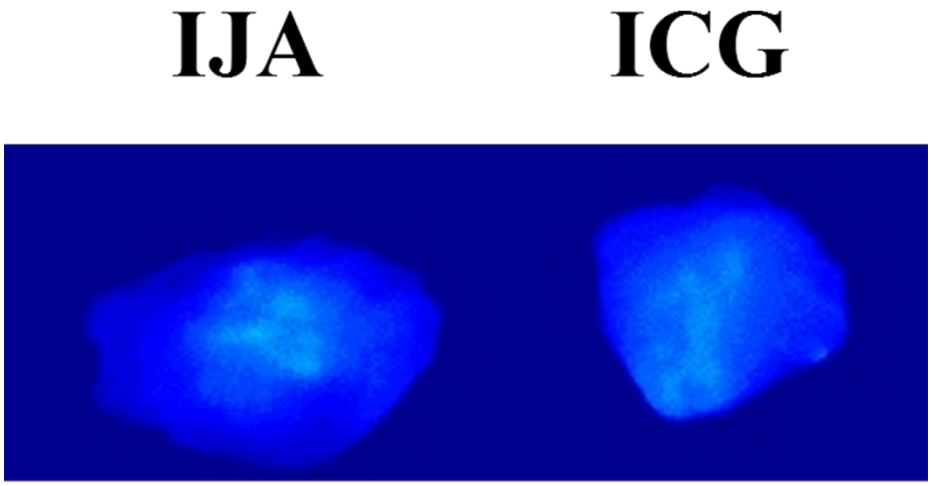

Figure S9 Fluorescence images of tumors collected 24 h post IJA or ICG injection.

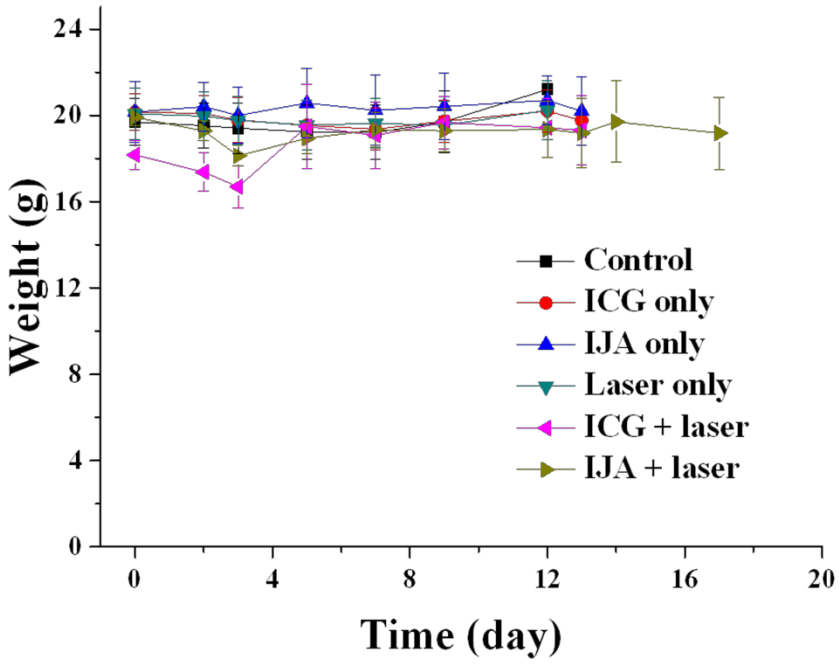

Figure S10 Body weight changes of different groups as a function of time following the treatments.