Electronic Supplementary Material (ESI) for RSC Advances.


# Polymer encapsulated clinical ICG nanoparticles for enhanced photothermal therapy and NIR fluorescence imaging in cervical cancer

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## Supplementary information

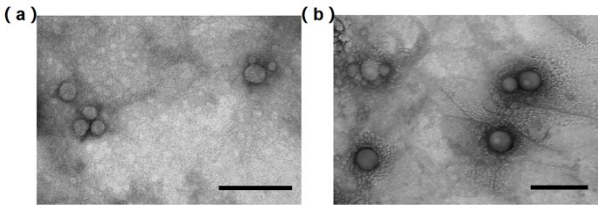


**Fig. S1** (a) Transmission electron microscope (TEM) images of clinical ICG nanoparticles (Scale bar: 200nm) and (b) ICG@PSMA nanoparticles (Scale bar: 500nm).

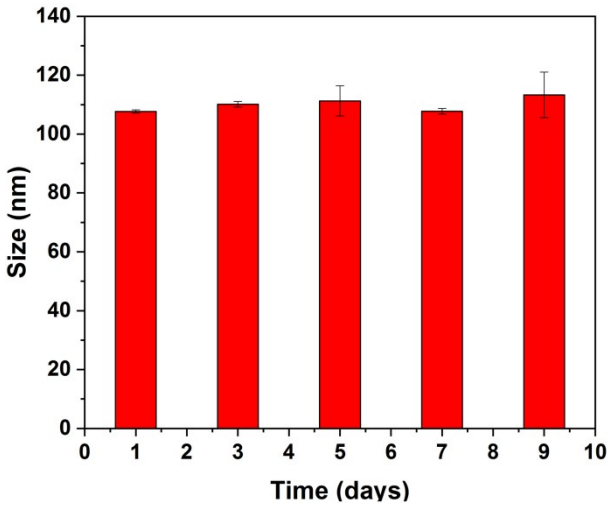


**Fig. S2** DLS size of ICG@PSMA NPs for 9 consecutive days.

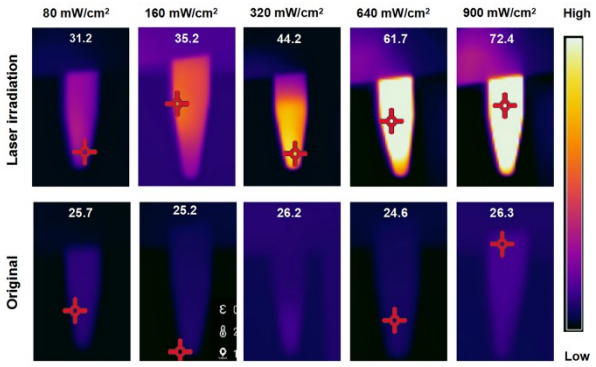


**Fig. S3** Thermal images of ICG@PSMA nanoparticles in aqueous dispersion (200 μg $mL^{-1}$) under different power densities of 808 nm excitation.

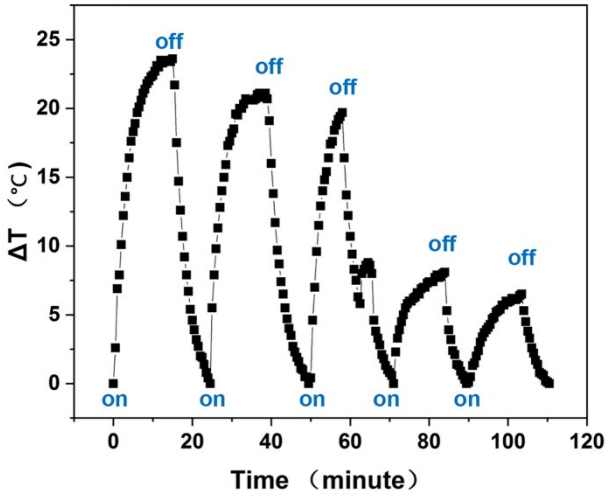


**Fig. S4** Heating/cooling curves of free ICG in aqueous dispersion (200 μg $mL^{-1}$, 808 nm excitation, 640 mW $cm^{-2}$) for 5 repeated irradiation cycles.

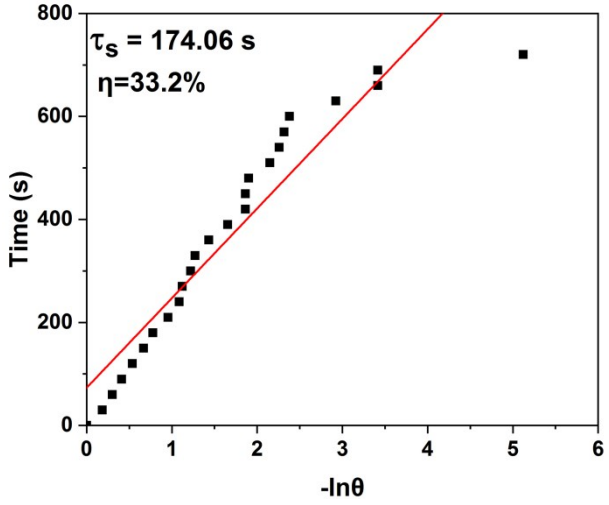


**Fig. S5** Linear time data versus *-lnϑ* obtained from the cooling period of ICG@PSMA NPs in aqueous dispersion.

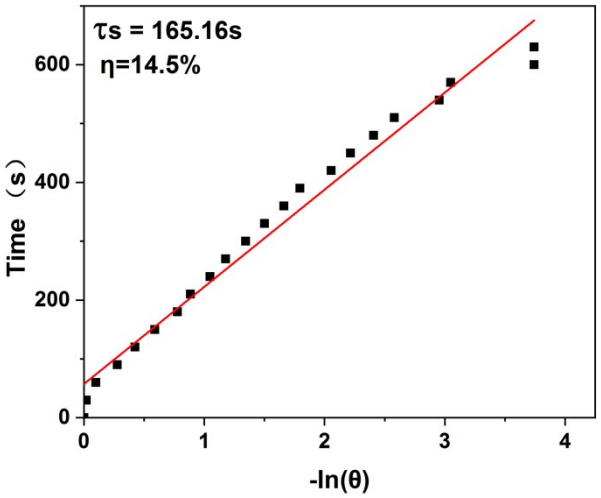


**Fig. S6** Linear time data versus *-lnϑ* obtained from the cooling period of free ICG in aqueous dispersion.

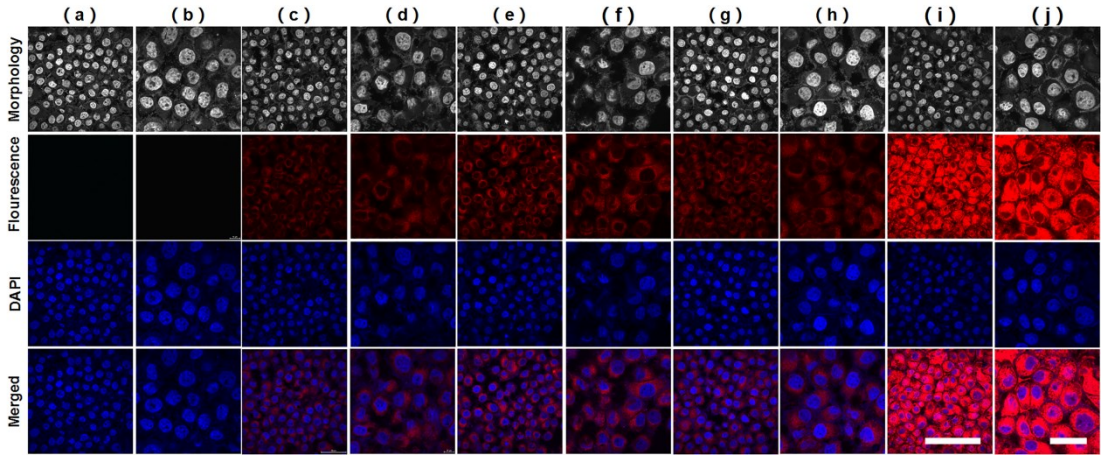


**Fig. S7** NIR fluorescence microscopic images of HeLa cells incubated with PBS, free ICG, and ICG@PSMA nanoparticles under CLSM. Images were obtained via 10 × objectvie (Scale bar: 100 μm), 20 × objective (Scale bar: 30 μm). $\lambda_{em}$= 800-1000 nm, $\lambda_{ex}$=480 nm (DAPI); $\lambda_{ex}$= 640 nm (ICG and ICG@PSMA nanoparticles). (a) and (b) HeLa cells treated with DMEM, (c) and (d) HeLa cells incubated with ICG (50 μg $mL^{-1}$), (e) and (f) ICG@PSMA nanoparticles (50 μg $mL^{-1}$), (g) and (h) ICG (100 μg $mL^{-1}$), (i) and (j) ICG@PSMA nanoparticles (100 μg $mL^{-1}$).

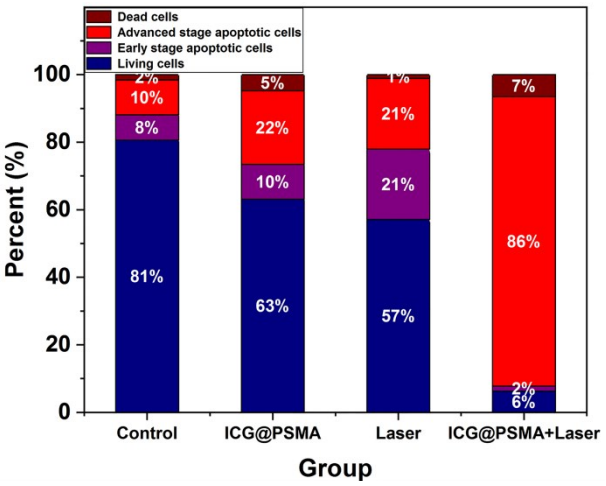


**Fig. S8** Live/dead ratios of HeLa cells with different treatments: (1) control, (2) ICG@PSMA nanoparticles (50 μg $mL^{-1}$), (3) Laser only, (4) ICG@PSMA nanoparticles (50 μg $mL^{-1}$) and laser (808 nm laser irradiation at a power density of 900 mW $cm^{-2}$ for 10 minutes).

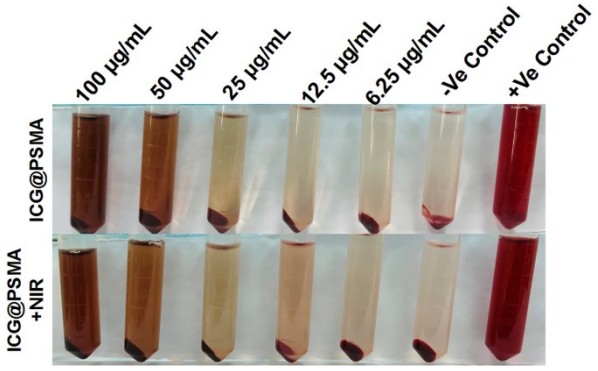


**Fig. S9** The hemolytic effect of ICG@PSMA NPs in all formulations at different concentrations (6.25, 12.5, 25, 50, and 100 μg/mL)

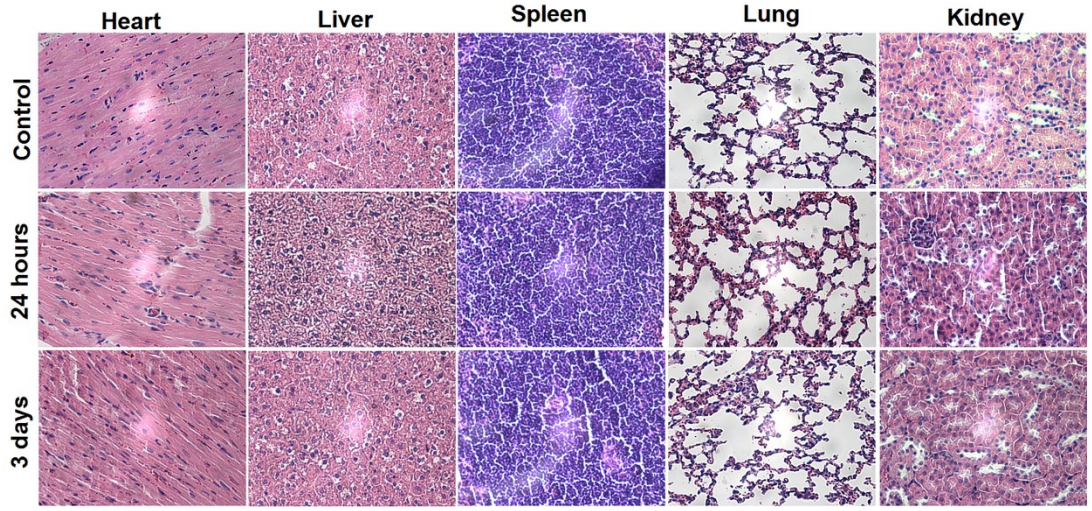

**Fig. S10** Sections of major organ slices from mice.