

Supporting Information for

Human iPS Cells Loaded with MnO₂ Based Nanoprobes for Photodynamic and Simultaneous Enhanced Immunotherapy Against Cancer

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Supplementary Figures

	MnO ₂	MnO ₂ @Ce6
Zeta Potential (mv)	30 ± 3.03	10 ± 1.25

Fig. S1 Zeta potential of MnO₂ and MnO₂@Ce6

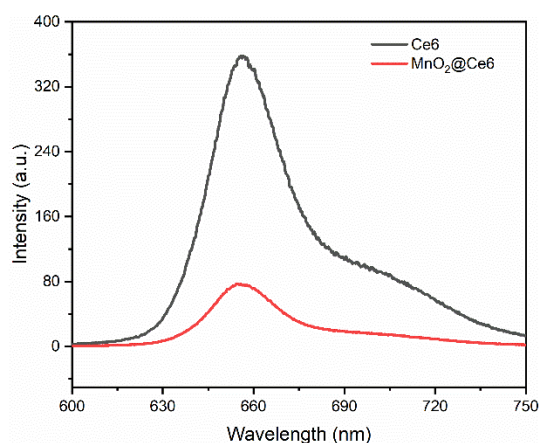


Fig. S2 Fluorescence emission spectra of Ce6 and MnO₂@Ce6

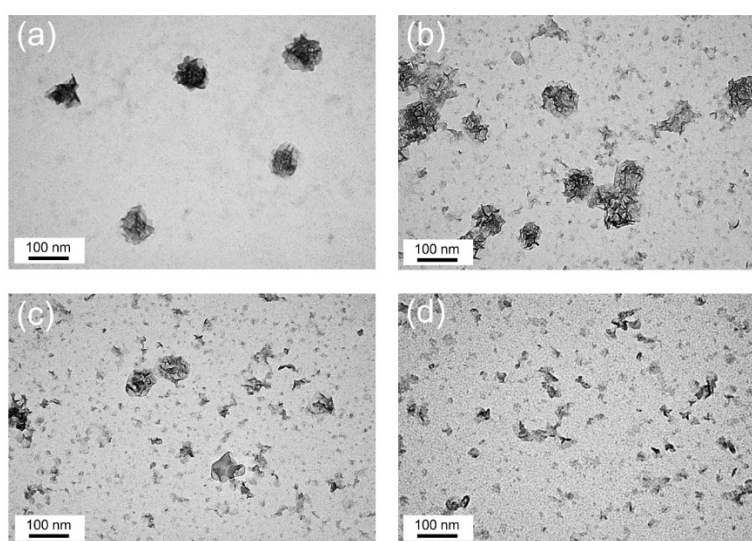


Fig. S3 TEM images of nanoprobes after incubation in PBS with different pH values for 6 h (7.4, 6.5, 5.0, 3.0)

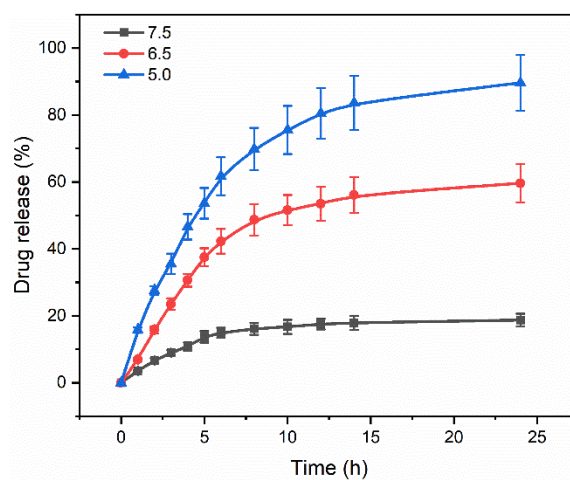


Fig. S4 Percentages of released Ce6 from MnO₂@Ce6 over time in PBS at different pH values (5.0, 6.5 and 5.5)

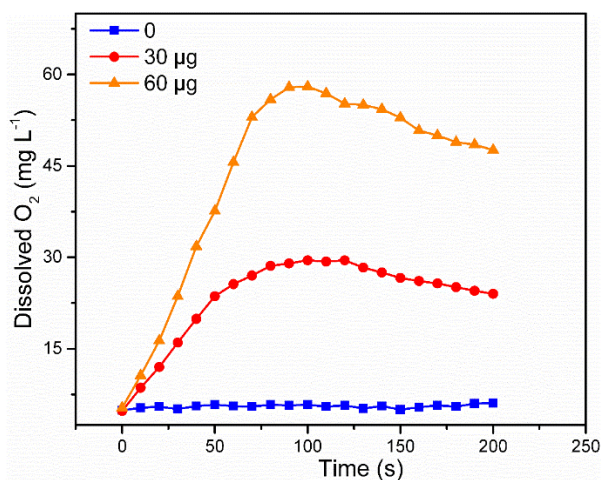


Fig. S5 O₂ generation capacity of MnO₂ in two concentrations in the presence of hydrogen peroxide (5×10^{-3} M)

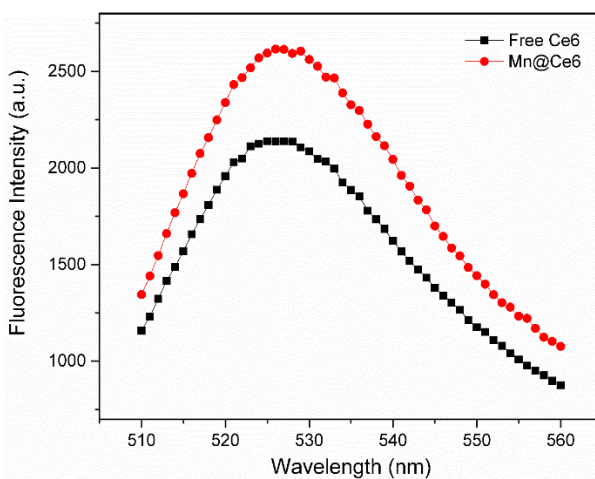


Fig. S6 SOSG fluorescence spectra of free Ce6 and MnO₂@Ce6 irradiated by laser for 3 minutes

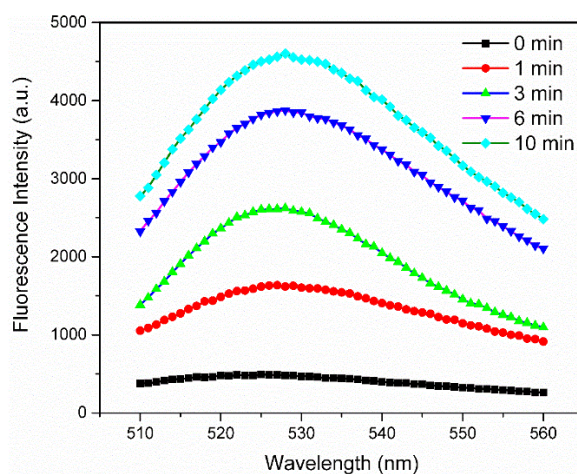


Fig. S7 SOSG fluorescence spectra of MnO₂@Ce6 irradiated by laser for different time intervals

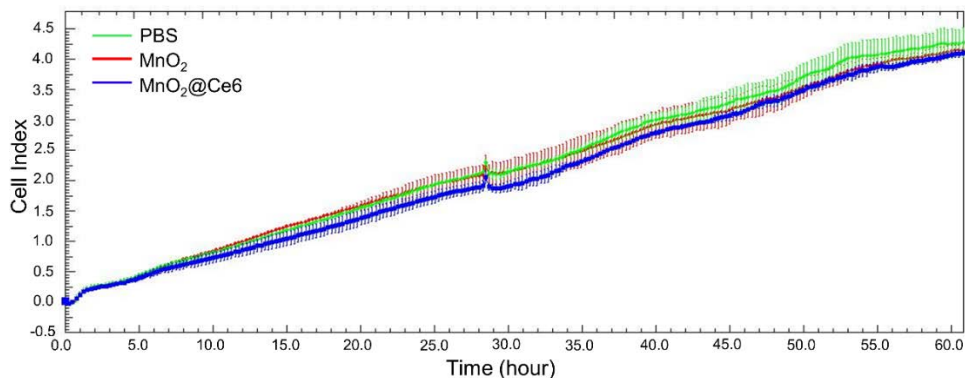


Fig. S8 Effect of nanoprobes on the proliferation of iPS cells

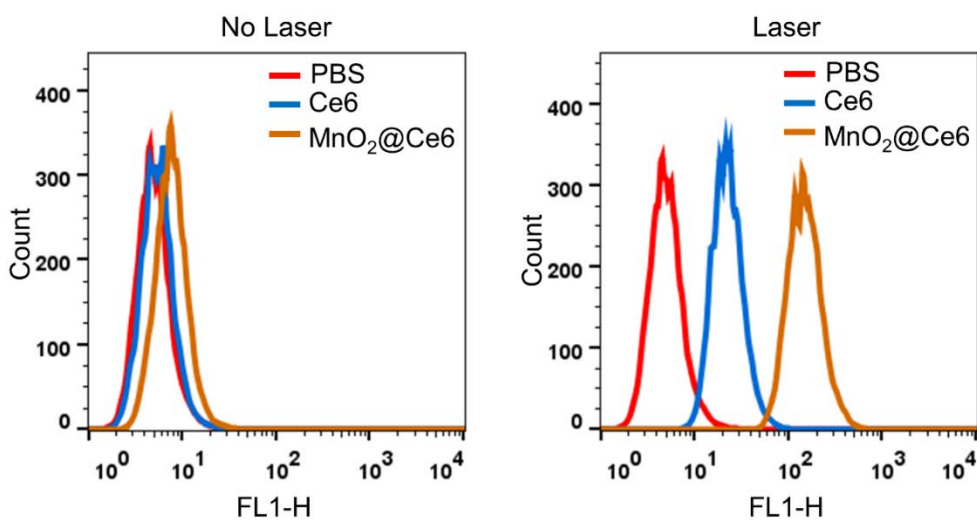


Fig. S9 Flow cytometric analysis of ROS generation in iPS cells incubated with PBS, Ce6 and Mn@Ce6 for 8 h, followed by 633 nm laser irradiation for 6 minutes (0.5 w/cm²).

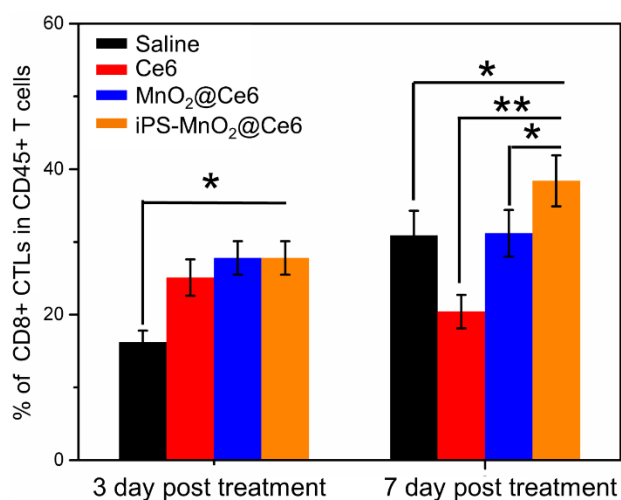


Fig. S10 Proportions of tumor-infiltrating CD8⁺ CTL cells in CD45⁺CD3⁺ T cells corresponding to the date in Fig. 6a

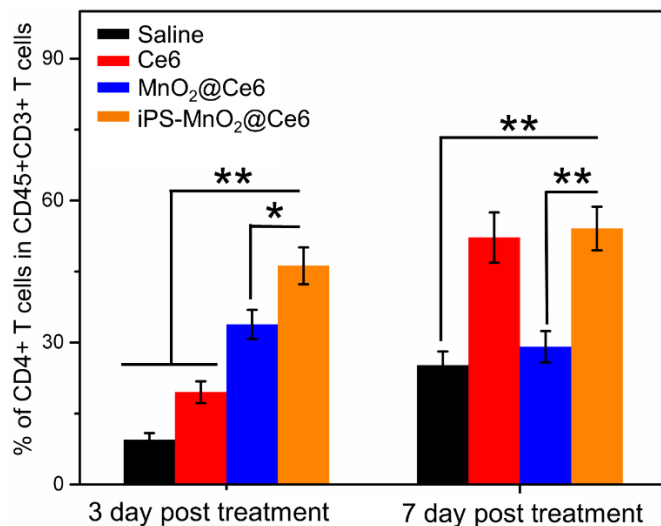


Fig. S11 Proportions of tumor-infiltrating CD4+ T cell in CD45+CD3+ T cells corresponding to the date in Fig. 6a

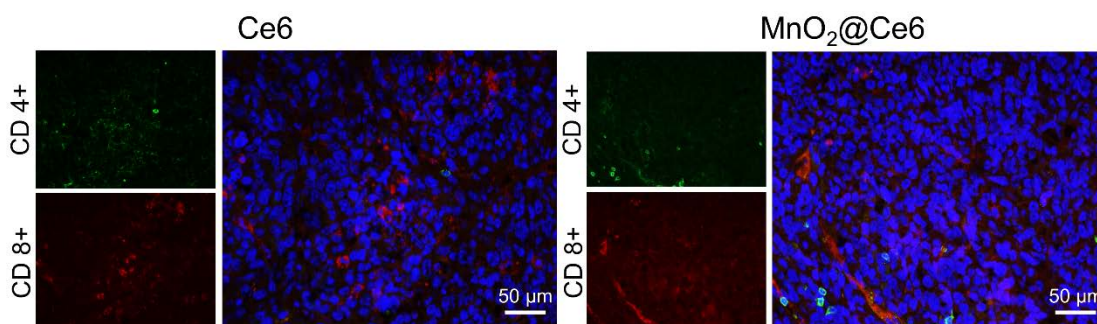


Fig. S12 Representative immunofluorescence images of tumor slides showing CD4+ and CD8+ T cells infiltrating into the tumor tissues. Green from CD4 antibody, red from CD8 antibody, and blue from DAPI

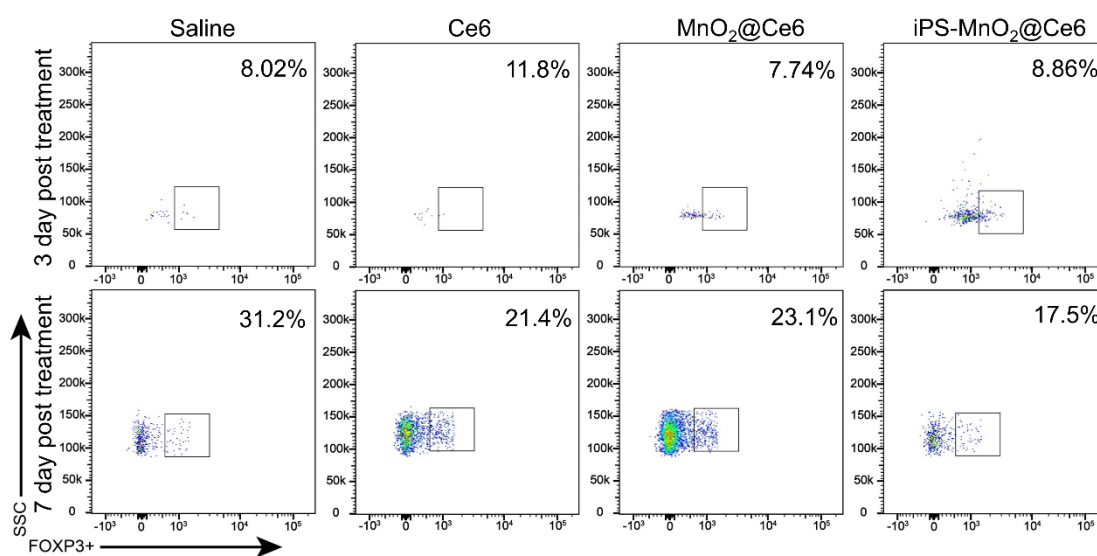


Fig. S13 Representative flow cytometry data of Treg cells infiltration in tumors

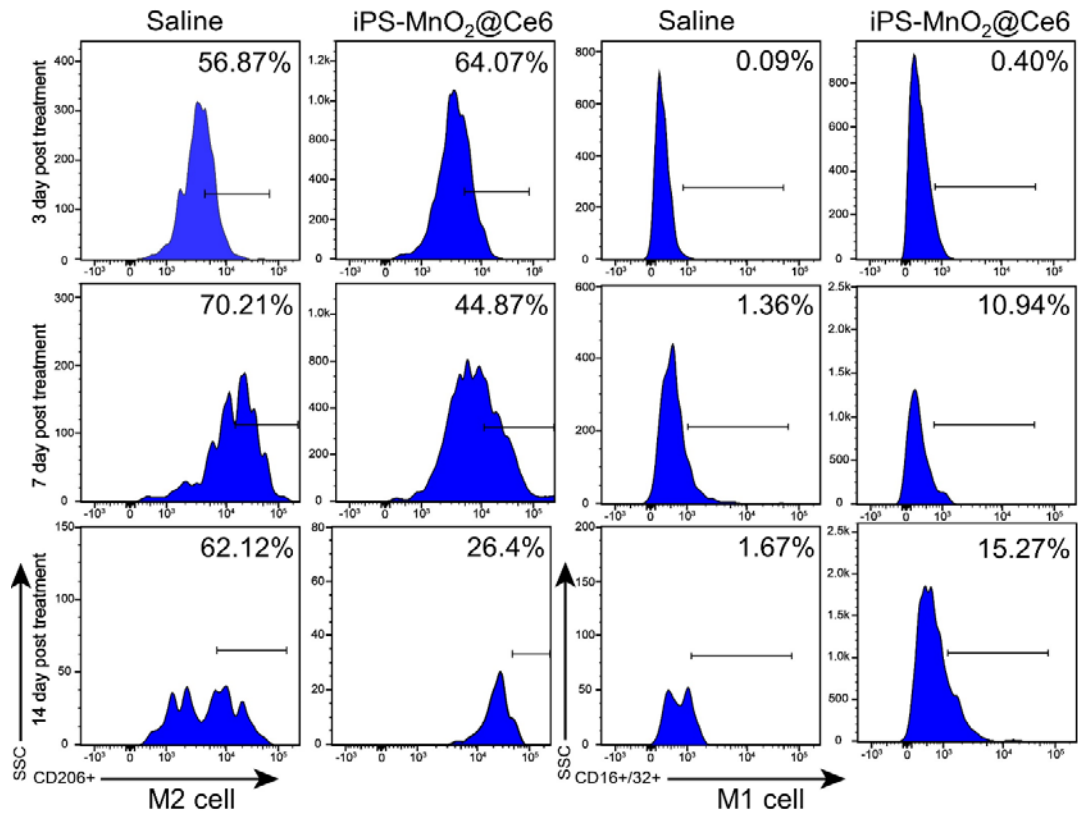


Fig. S14 Representative flow cytometry data of macrophages cells infiltration in tumors

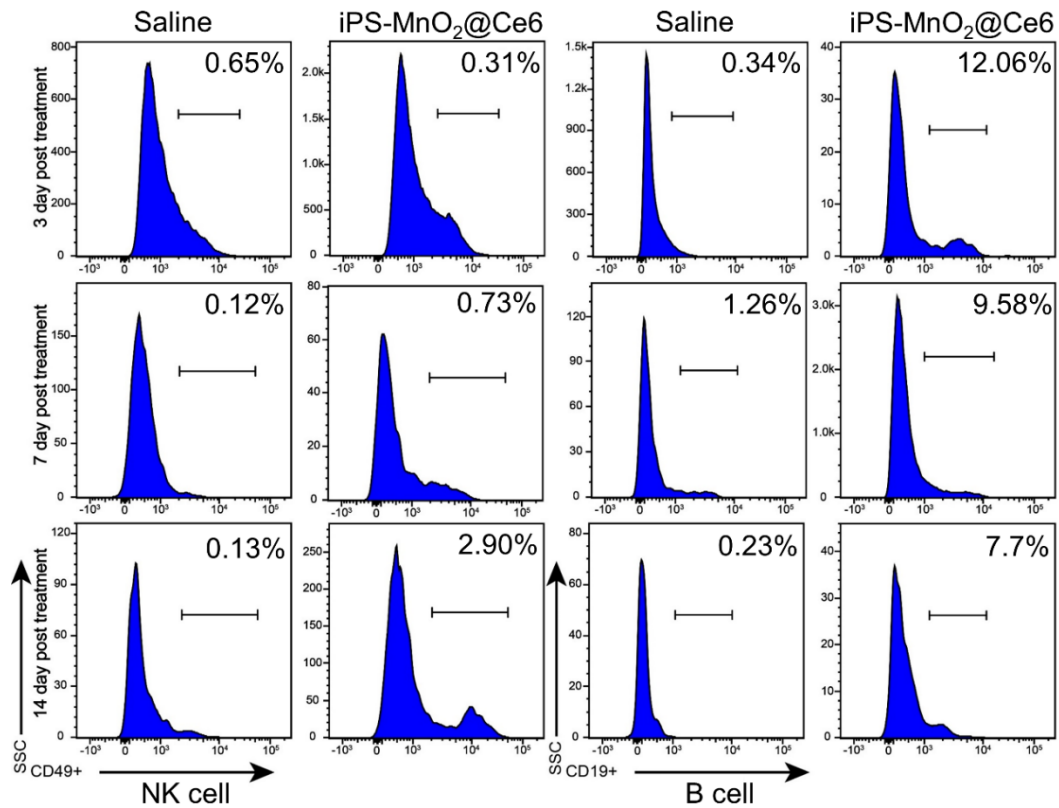


Fig. S15 Representative flow cytometry data of NK and B cells infiltration in tumors

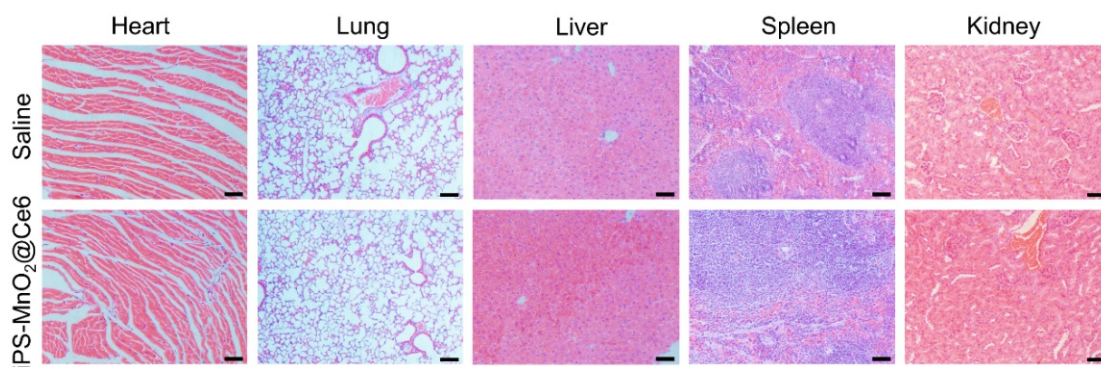


Fig. S16 Representative H&E sections of the main organs after the nanoplateform - based combination therapy. The saline group served as contrast

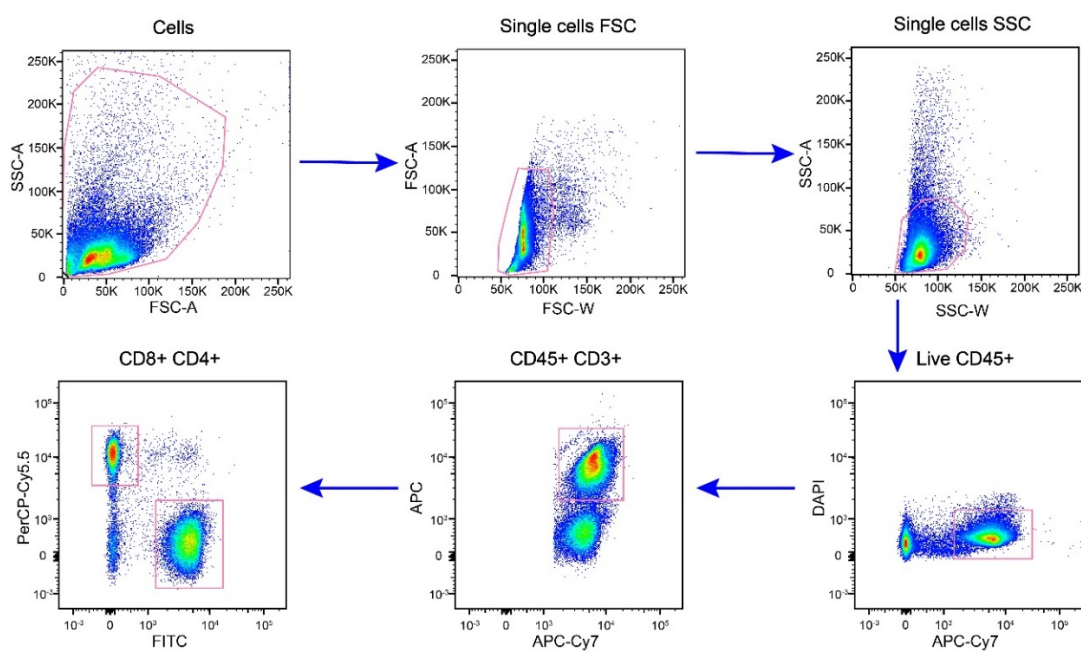


Fig. S17 Gating strategy of CD4+/CD8+ T cells in tumor sites and tumor-draining lymph nodes

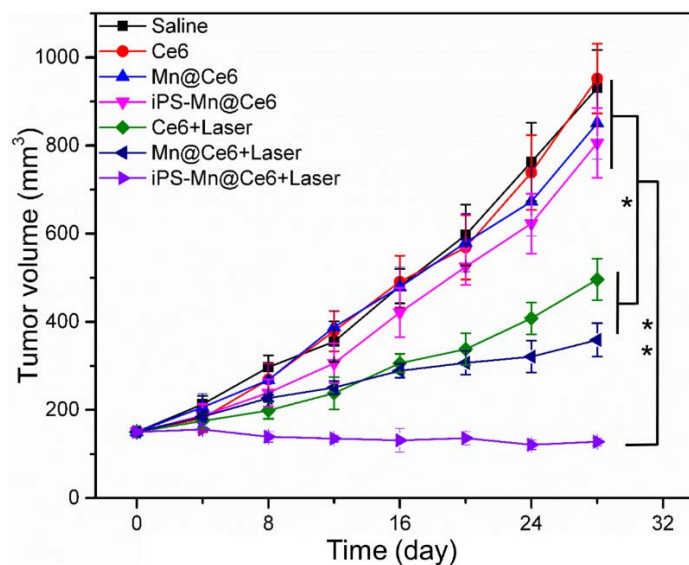


Fig. S18 Anti-tumor activity of iPS-MnO₂@Ce6 in vivo on the liver cancer model. Changes of tumor volume with time increase in various groups after laser irradiation (n=5 in per group). Statistical significance was calculated via two-tailed Student's - test. *P* value: **P*<0.01, ** *P*<0.001. (b) Survival curves of the mice in each group after different treatments (n=5 in per group)

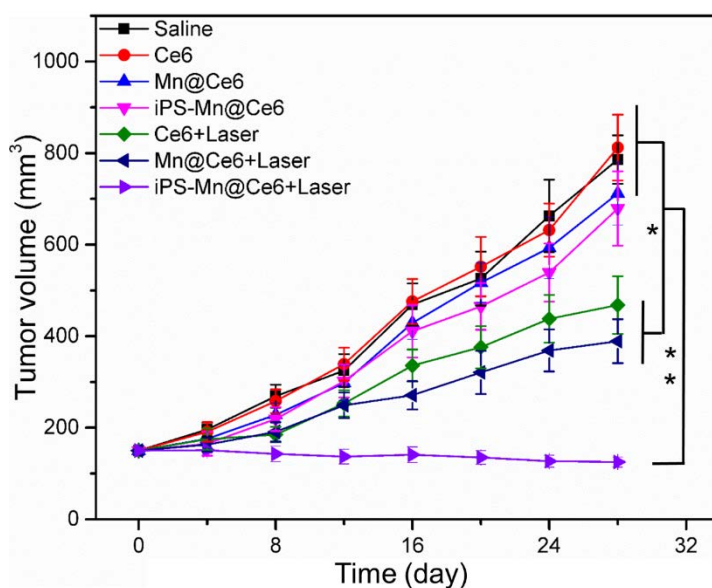


Fig. S19 Anti-tumor activity of iPS-Mn@Ce6 in vivo on the gastric cancer model. (a) Changes of tumor volume with time increase in various groups after laser irradiation (n=5 in per group). Statistical significance was calculated via two-tailed Student's - test. *P* value: **P*<0.01, ** *P*<0.001. (b) Survival curves of the mice in each group after different treatments (n=5 in per group)