## **Supporting information**

## Self-Adjuvanting Photosensitizer Nanoparticles for Combination Photodynamic-Immunotherapy

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Figure S1. Molecular structures of (A) Ce6 and (B) IMDQ.



**Figure S2.** (A) AFM images and (B) corresponding height profile of Ce6-IMDQ NPs. The average height is around 82 nm.



Figure S3. Zeta potential of Ce6-IMDQ NPs in water.



Figure S4. FTIR spectra of Ce6, IMDQ, and Ce6-IMDQ NPs.



Figure S5. (A) UV-Vis absorbance and (B) standard curves of Ce6.



Figure S6. (A) HPLC analysis and (B) standard curves of IMDQ.



**Figure S7.** (A) UV-Vis absorbance spectra and (B) magnified UV-Vis absorbance spectra (550-800 nm) of Ce6-IMDQ NPs in the presence and absence of SDS (0.2%, w/v).



**Figure S8.** (A) UV-Vis absorbance spectra and (B) magnified UV-Vis absorbance spectra (550-800 nm) of Ce6-IMDQ NPs in the presence and absence of NaCl (0.9%, w/v).



**Figure S9.** CLSM image of 4T1 cells after incubation with free Ce6 and Ce6-IMDQ NPs at an equivalent concentration of Ce6 ( $3.2 \mu g m L^{-1}$ ) for 24 h. Nucleus and membrane were stained with Hoechst 33342 (blue) and WGA-AF488 (green), respectively. Scale bars are 25  $\mu m$ .



**Figure S10.** Flow cytometry analysis of the cell uptake after incubation with Ce6-IMDQ NPs for different time.



**Figure S11.** Generation of ROS in 4T1 cells detected by DCFH-DA probe. Data are represented as the means  $\pm$  SD (n=3). \**P* < 0.05.



Figure S12. CRT expression in 4T1 cells after incubation with free Ce6 or Ce6-IMDQ NPs in the absence and presence of laser radiation. Data are represented as the means  $\pm$  SD (n=3). \**P* < 0.05.



**Figure S13.** CLSM image of CRT expression in 4T1 cells after incubation with free Ce6 and Ce6-IMDQ NPs, respectively, and subsequent 660 nm laser irradiation. Nucleus was stained with Hoechst 33342 (blue). CRT was stained with anti-calreticulin antibody and AF488-conjugated secondary antibody (green). Scale bars are 10 µm.



**Figure S14.** Expression of CD80 and CD86 on BMDCs after incubation with various formulations-treated 4T1 cells. Data are represented as the means  $\pm$  SD (n=3). \**P* < 0.05, \*\**P* < 0.01, and \*\*\**P* < 0.001.



Figure S15. Fluorescence intensity of major organs and tumor collected after 24 h postinjection of Ce6-IMDQ NPs.



**Figure S16.** (A) Primary and (B) distant tumor images obtained from the mice after various treatments. Scale bars are 1 cm.



Figure S17. H&E staining images of major organs from mice after various treatments. Scale bars are  $100 \ \mu m$ .