Supporting information

Self-Adjuvanting Photosensitizer Nanoparticles for Combination Photodynamic-Immunotherapy

Guiqiang Zhang,^a Ning Wang,^a Haifeng Sun,^a Xiao Fu,^a Shumei Zhai,^a Jiwei Cui,^{a,b,c,*}

^aKey Laboratory of Colloid and Interface Chemistry of the Ministry of Education, School of Chemistry and Chemical Engineering, Shandong University, Jinan, Shandong 250100, China.

^bState Key Laboratory of Microbial Technology, Shandong University, Qingdao, Shandong 266237, China.

^cAdvanced Medical Research Institute, Shandong University, Jinan, Shandong 250012, China.

*Corresponding authors. E-mail: jwcui@sdu.edu.cn



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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 μm .



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 $100 \ \mu m$.