Electronic Supplementary Information

Phthalocyanine-based coordination polymer nanoparticle for

enhanced photodynamic therapy

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Supplementary caption

Scheme S1. Synthesis route of tetra(4-carboxyphenoxy)-phthalocyaninatozinc(II) (TPZnPc).

Fig. S1. ¹H NMR spectra of 4-(4-carboxyphenoxy) phthalonitrile.

Fig. S2. ESI-MS spectra of 4-(4-carboxyphenoxy) phthalonitrile.

Fig. S3. IR spectra of 4-(4-carboxyphenoxy) phthalonitrile

Fig. S4. ¹H NMR spectra of TPZnPc.

Fig. S5. MALDI-TOF-MS spectra of TPZnPc.

Fig. S6. IR spectra of TPZnPc.

Scheme S2. Synthesis route of DCA-Lys-Chol (DLC).

Fig. S7. ¹H NMR spectra of LC.

Fig. S8. ESI-MS spectra of LC.

Fig. S9. ¹H NMR spectra of DLC.

Fig. S10. ESI-MS spectra of DLC.

Fig. S11. ¹H NMR spectra of PCPNs@DOPA and DOPA. The structural formula (inset) is DOPA molecule.

Fig. S12. Fluorescence emission spectrum of PCPNs@Lip/DLC at pH 7.4 and 6.5 in PBS.

Fig. S13. UV-vis absorption spectra changes of the ¹O₂ indicator ABDA mixed with (A) TPZnPc,

(B) PCPNs@Lip and (C) PCPNs@Lip/DLC for different times under laser irradiation.

Fig. S14. The photostability of (A) TPZnPc, (B) PCPNs@Lip and (C) PCPNs@Lip/DLC.

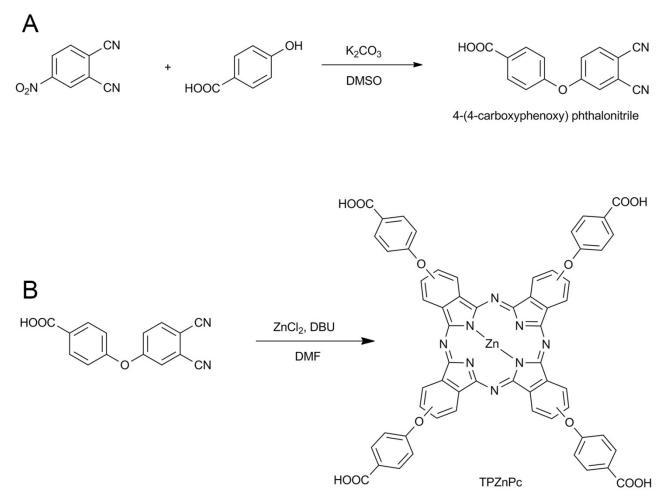
Fig. S15. Photostability of TPZnPc, PCPNs@Lip and PCPNs@Lip/DLC in PBS.

Fig. S16. The stability of the PCPNs@Lip/DLC incubated with PBS (10% FBS). The sample solution was laser irradiated for 15 min at 4 h.

Fig. S17. UV-vis absorption spectra of PCPNs@Lip/DLC incubation with PBS at (A) pH 7.4, (B) pH 6.5 and (C) pH 5.0.

Fig. S18. Zeta potential variation of PCPNs@Lip/DLC at different pH values for 24 h.

Fig. S19. *In vitro* cytotoxicity of TPZnPc, PCPNs@Lip and PCPNs@Lip/DLC against MCF-7 cells without irradiation.



Scheme S1. Synthesis route of tetra(4-carboxyphenoxy)-phthalocyaninatozinc(II) (TPZnPc).

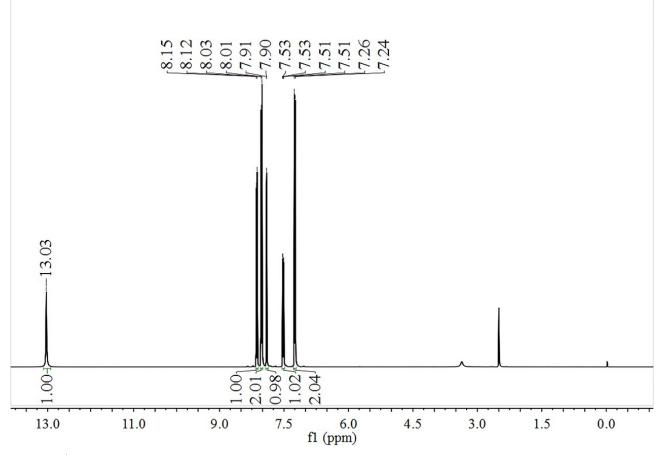


Fig. S1. ¹H NMR spectra of 4-(4-carboxyphenoxy) phthalonitrile.

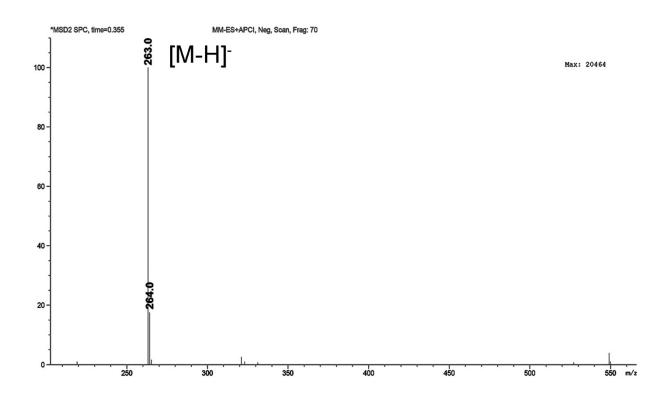
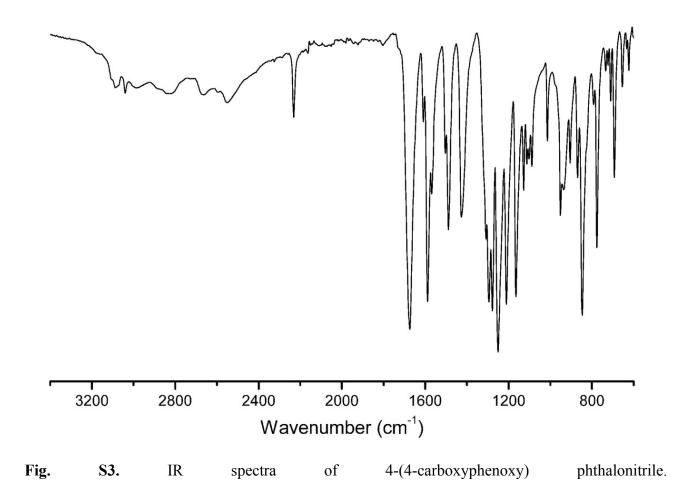


Fig. S2. ESI-MS spectra of 4-(4-carboxyphenoxy) phthalonitrile.



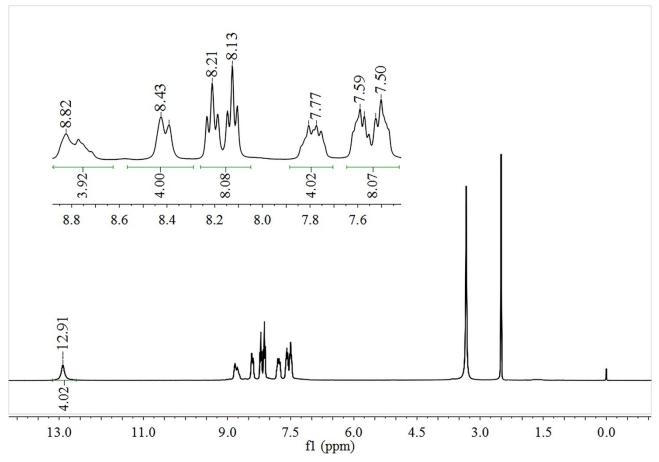


Fig. S4. ¹H NMR spectra of TPZnPc.

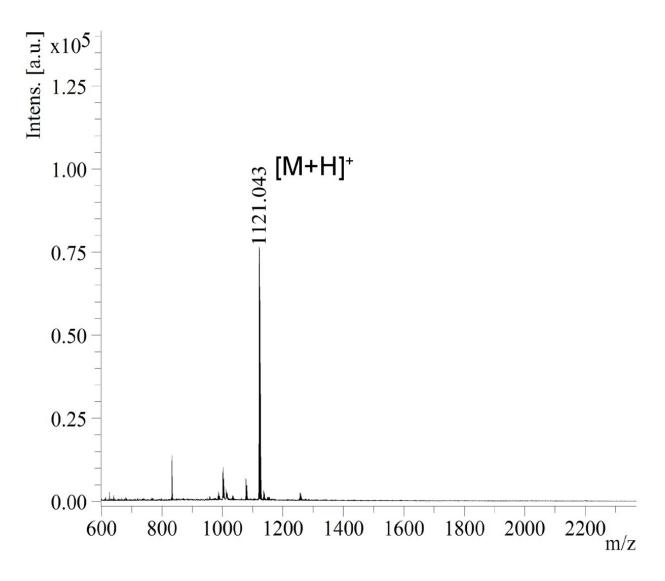


Fig. S5. MALDI-TOF-MS spectra of TPZnPc.

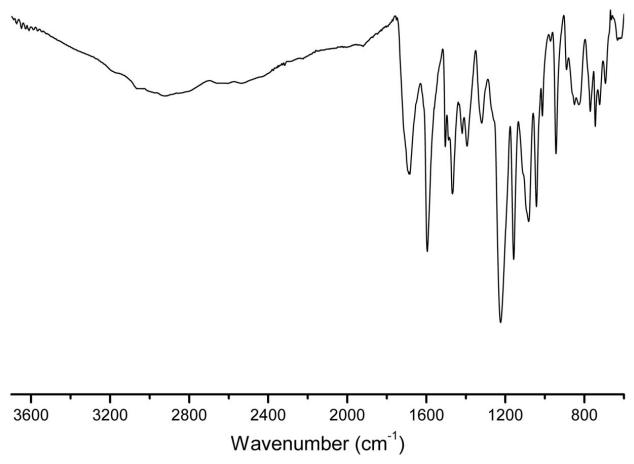
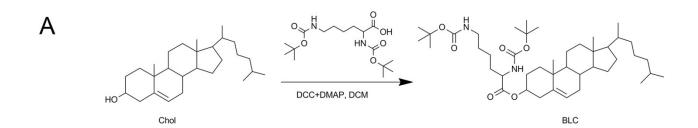
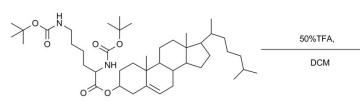
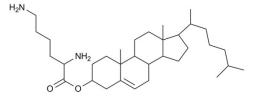
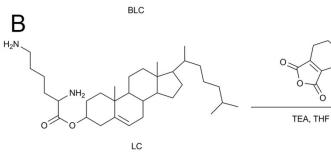


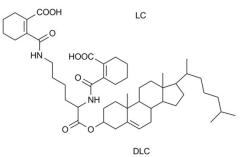
Fig. S6. IR spectra of TPZnPc.











S2.

Scheme

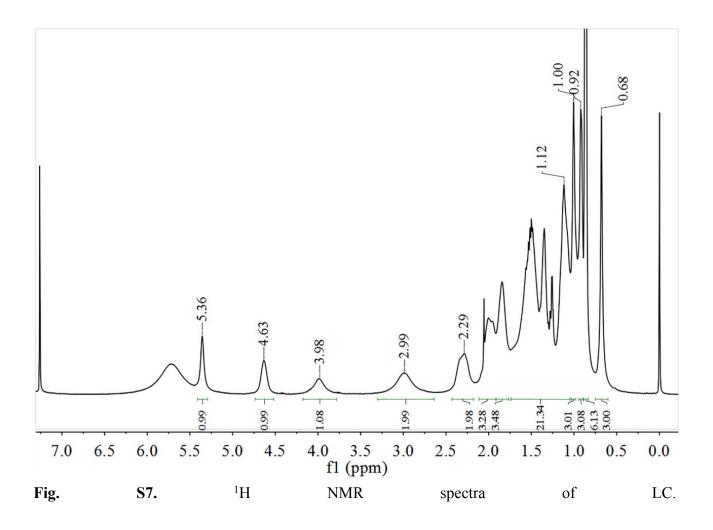
Synthesis

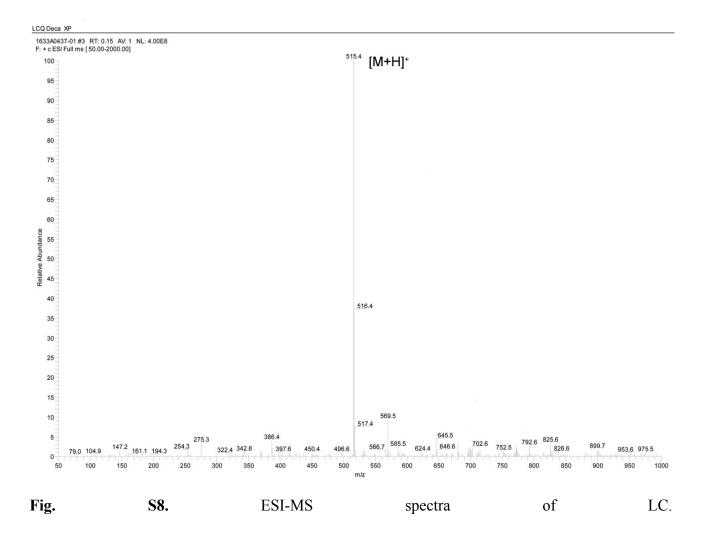
of

route

DCA-Lys-Chol

(DLC).





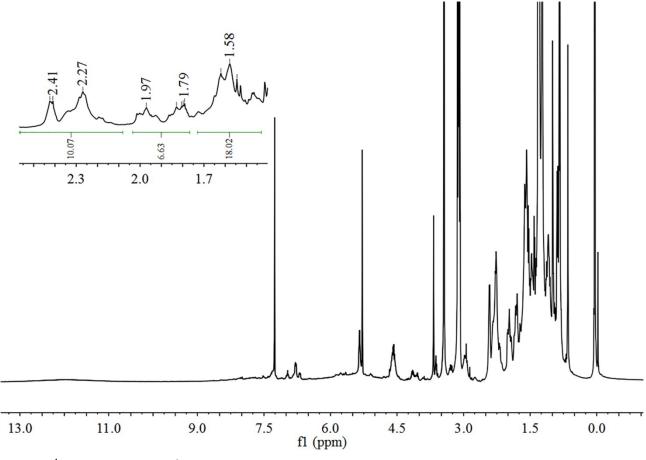


Fig. S9. ¹H NMR spectra of DLC.

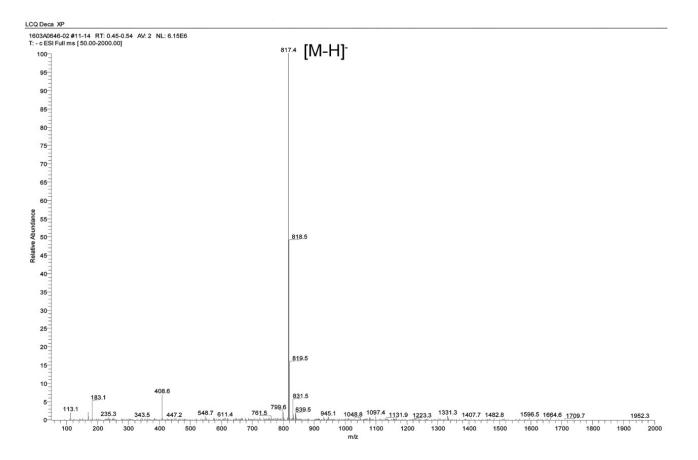


Fig. S10. ESI-MS spectra of DLC.

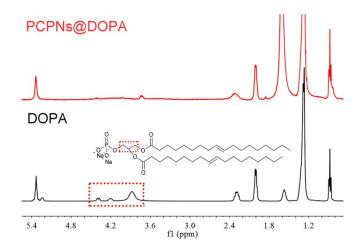


Fig. S11. ¹H NMR spectra of PCPNs@DOPA and DOPA. The structural formula (inset) is DOPA molecule.

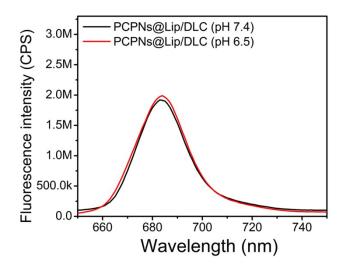


Fig. S12. Fluorescence emission spectrum of PCPNs@Lip/DLC at pH 7.4 and 6.5 in PBS.

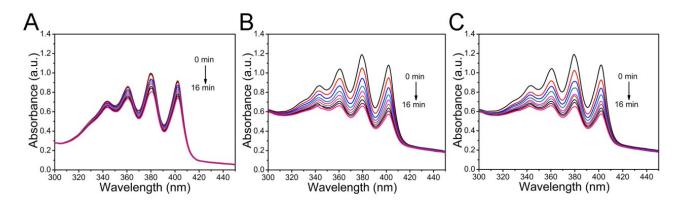


Fig. S13. UV-vis absorption spectra changes of the ${}^{1}O_{2}$ indicator ABDA mixed with (A) TPZnPc, (B) PCPNs@Lip and (C) PCPNs@Lip/DLC for different times under laser irradiation.

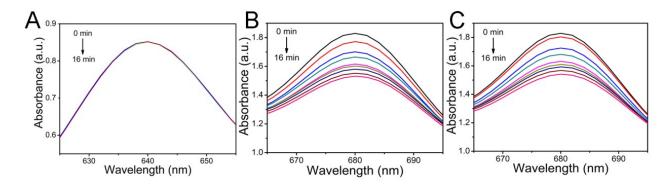


Fig. S14. The photostability of (A) TPZnPc, (B) PCPNs@Lip and (C) PCPNs@Lip/DLC.

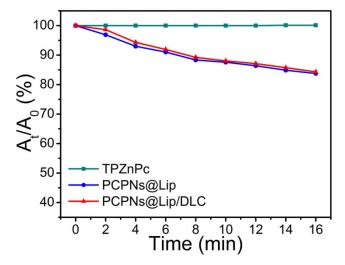


Fig. S15. Photostability of TPZnPc, PCPNs@Lip and PCPNs@Lip/DLC in PBS.

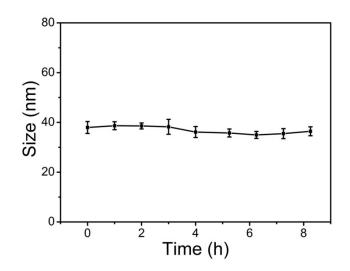


Fig. S16. The stability of the PCPNs@Lip/DLC incubated with PBS (10% FBS). The sample solution was laser irradiated for 15 min at 4 h.

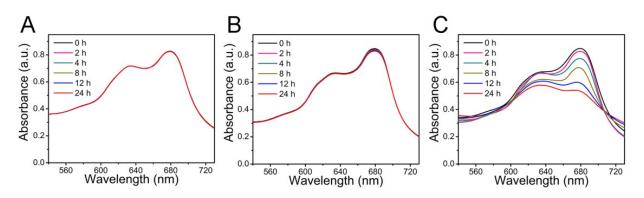


Fig. S17. UV-vis absorption spectra of PCPNs@Lip/DLC incubation with PBS at (A) pH 7.4, (B) pH 6.5 and (C) pH 5.0.

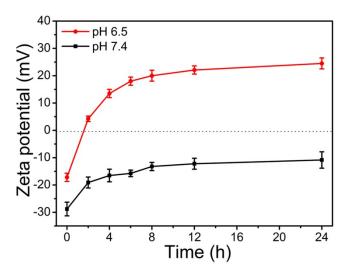


Fig. S18. Zeta potential variation of PCPNs@Lip/DLC at different pH values for 24 h.

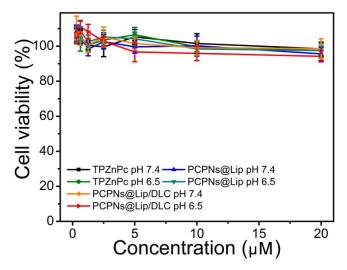


Fig. S19. *In vitro* cytotoxicity of TPZnPc, PCPNs@Lip and PCPNs@Lip/DLC against MCF-7 cells without irradiation.