

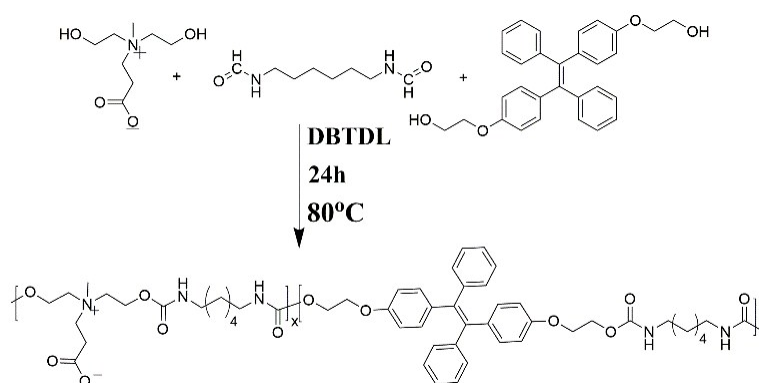
## Supporting Information (SI)

# Acidity-triggered zwitterionic prodrug nano-carriers with AIE property and amplification of oxidative stress for mitochondria-targeted cancer theranostics

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Scheme S1. Detailed Synthetic Route of the TPE-CB PUs

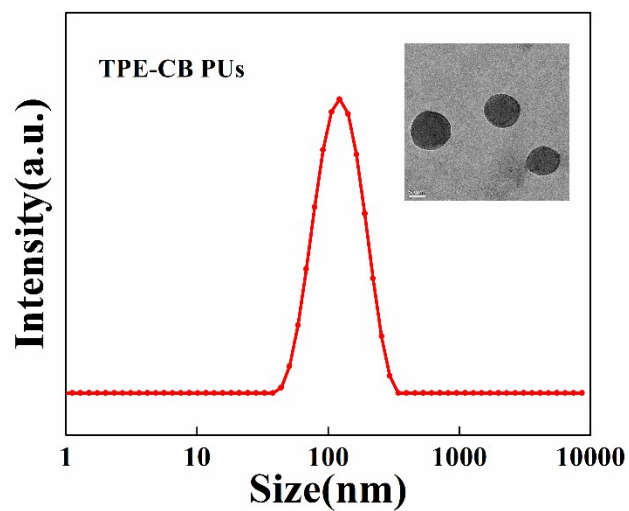


Figure S1. Hydrodynamic size and TEM image of TPE-CB PUs

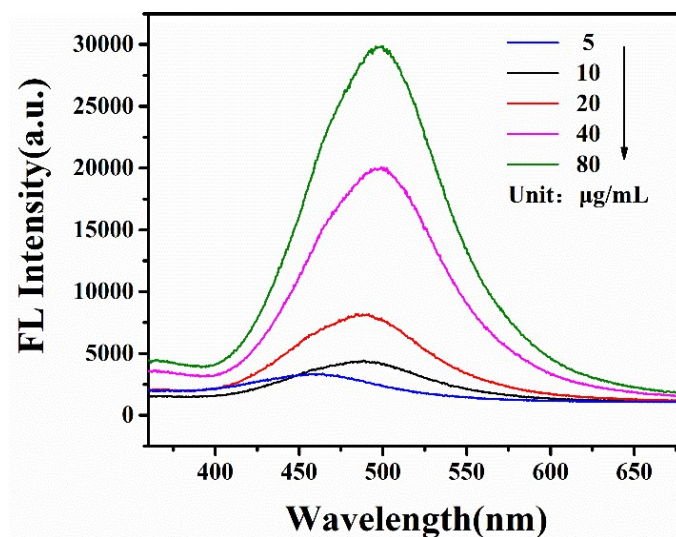
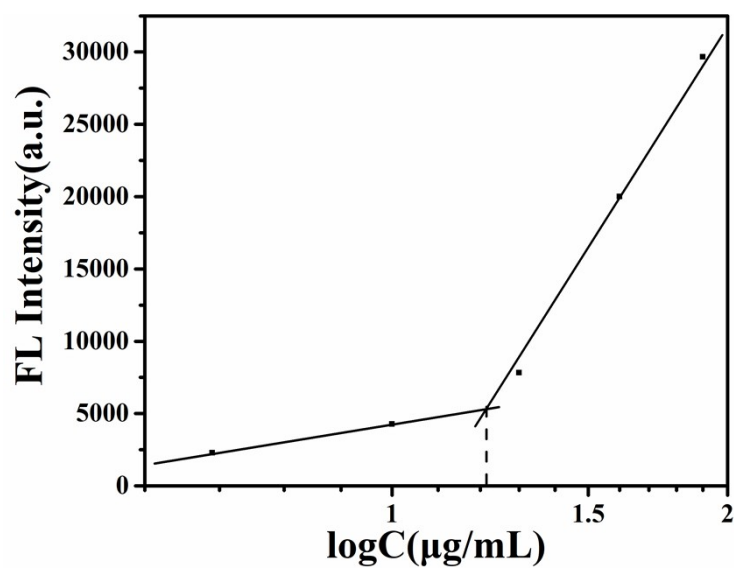
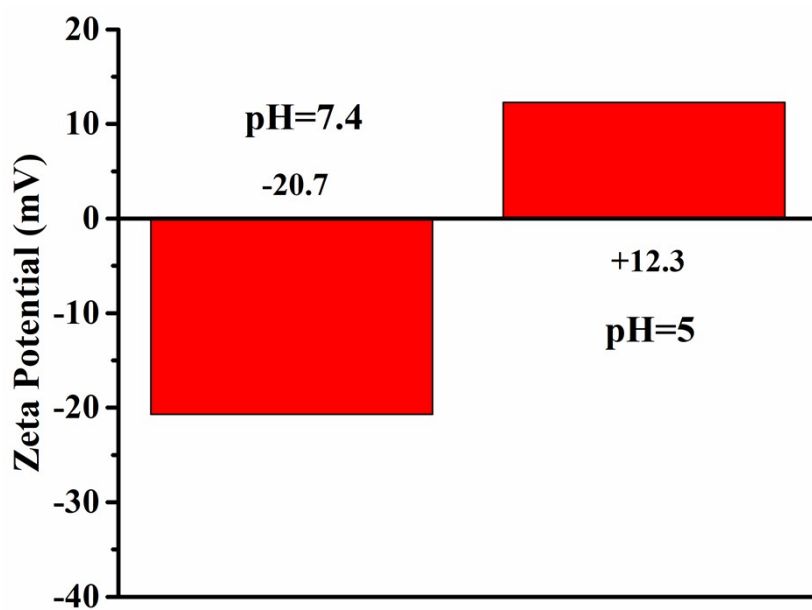


Figure S2. PL spectra of TPE-CB-CA-TPP PUs measured with different concentrations

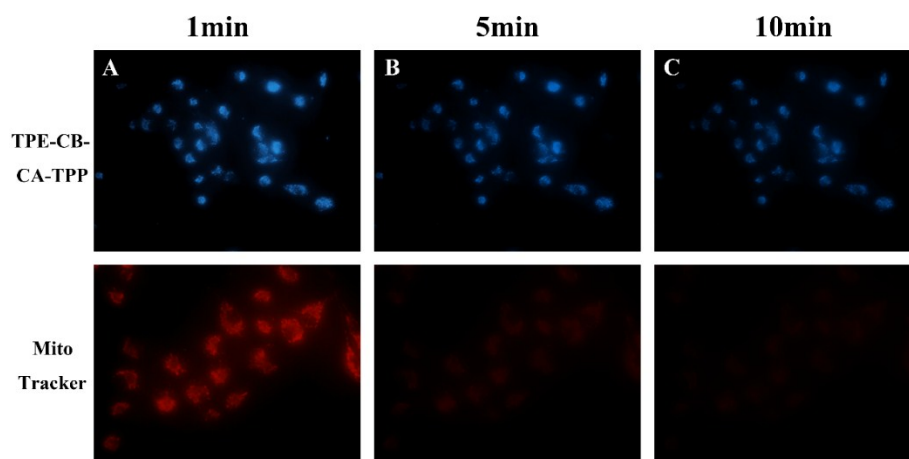
( $\lambda_{\text{ex}}$ =350 nm)



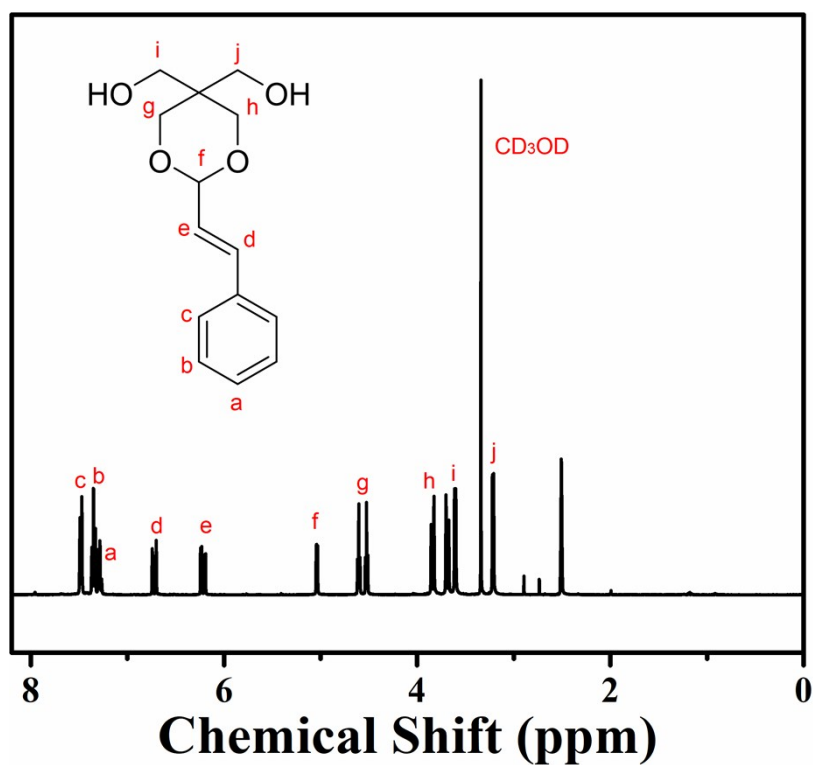
**Figure S3.** the CMC of TPE-CB-CA-TPP PUs determined by different concentrations of PL spectra



**Figure S4.** pH-dependent change of surface charge of TPE-CB-TPP PUs as measured by zeta potential



**Figure S5.** The anti-photobleaching of TPE-CB-CA-TPP PUs



**Figure S6.** the  $^1\text{H}$  NMR spectra of DHCA

$^1\text{H}$  NMR (400MHz, 500 $\mu\text{L}$   $\text{CD}_3\text{OD}$ ),  $\delta$  (ppm) = 7.48 (d,  $J$  = 7 Hz, 2H), 7.35 (t,  $J$  = 14 Hz, 2H), 7.27 (m, 1H), 6.72 (d,  $J$  = 16 Hz, 1H), 6.22 (dd,  $J$  = 20 Hz, 1H), 5.04 (dd,  $J$  = 5 Hz, 1H), 4.55 (m, 2H), 3.83 (d,  $J$  = 11 Hz, 2H), 3.69 (d,  $J$  = 11 Hz, 2H), 3.61 (d,  $J$  = 5 Hz, 2H), 3.22 (d,  $J$  = 5 Hz, 2H).

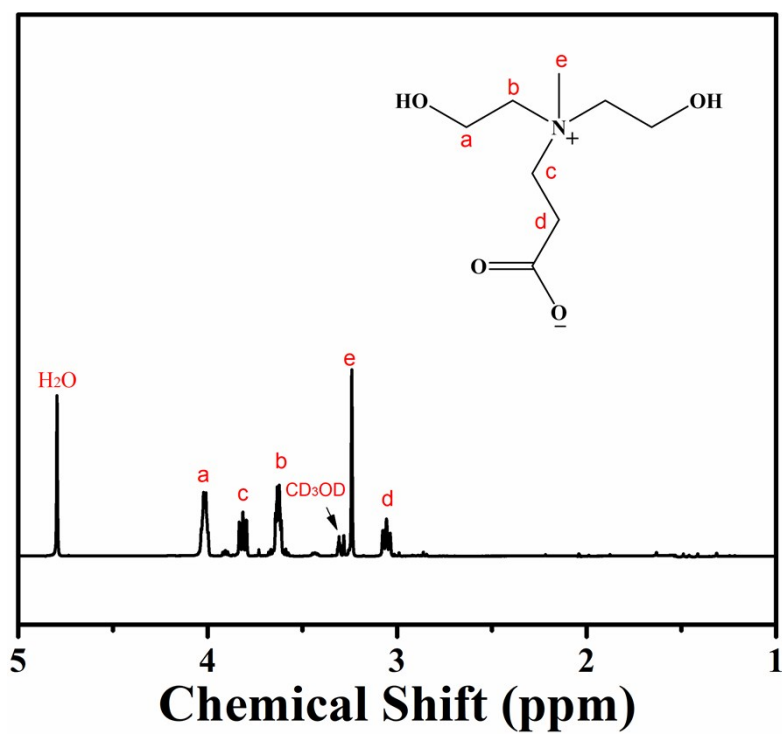


Figure S7. the <sup>1</sup>H NMR spectra of DHCB

<sup>1</sup>H NMR (400MHz, 500μL CD<sub>3</sub>OD), δ (ppm) = 4.01 (m, 4H), 3.82 (t, J = 15 Hz, 2H), 3.64 (m, 4H), 3.30 (s, 3H), 3.09 (t, J = 15 Hz, 2H).

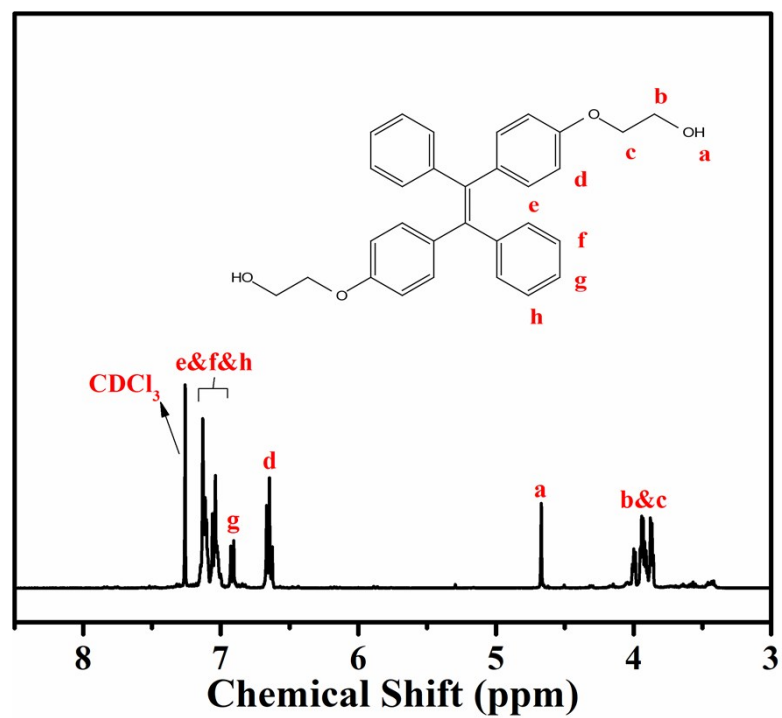
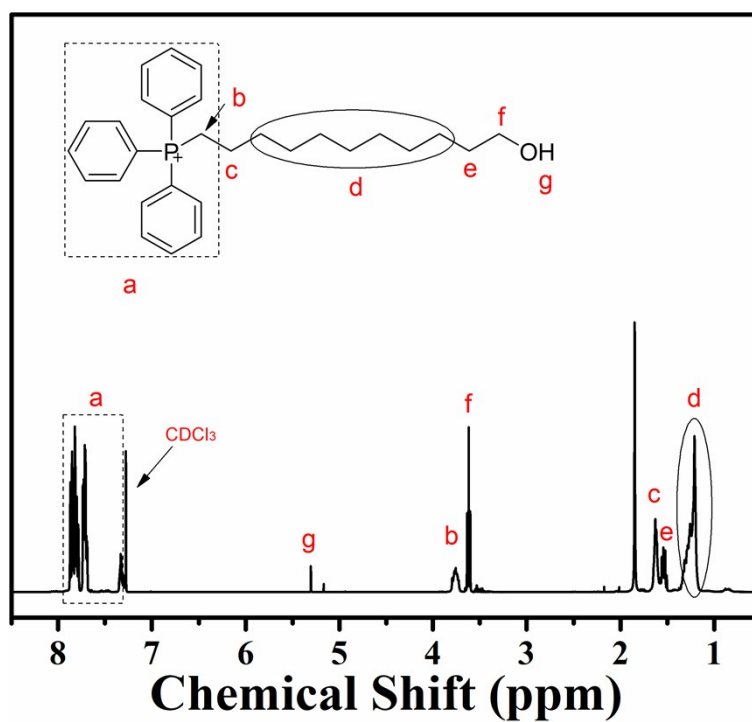


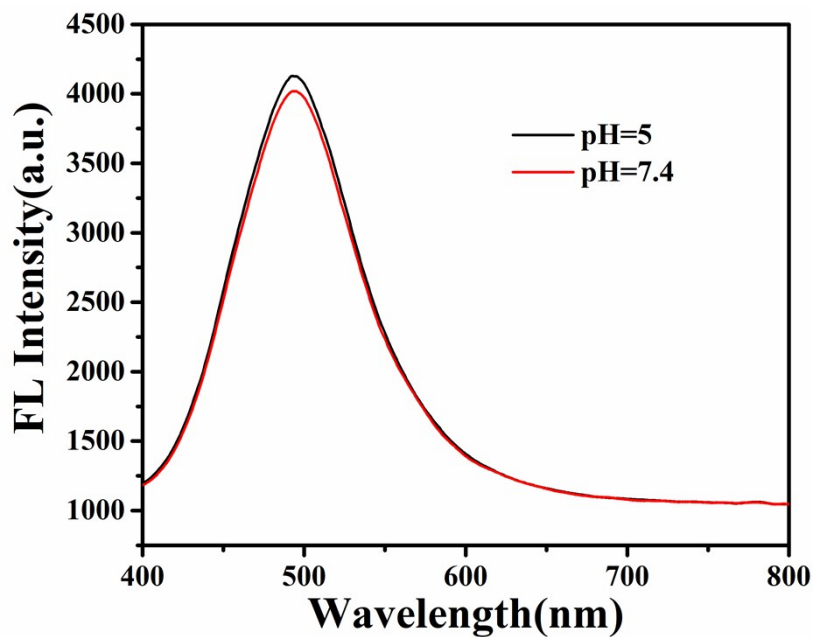
Figure S8. the <sup>1</sup>H NMR spectra of DHTPE

<sup>1</sup>H NMR (400MHz, 500μL CDCl<sub>3</sub>), δ (ppm) = 7.16-6.99 (m, 12H), 6.91 (d, J = 8 Hz, 2H), 6.65 (t, J = 16 Hz, 4H), 4.67 (s, 2H), 4.02-3.85 (m, 8H).



**Figure S9.** the <sup>1</sup>H NMR spectra of TPP

<sup>1</sup>H NMR (400MHz, 500 $\mu$ L CDCl<sub>3</sub>),  $\delta$  (ppm) =7.89-7.68 (m, 15H), 5.31 (s, 1H), 3.81-3.70 (m, 2H), 3.62 (t, J= 13Hz, 2H), 1.67-1.58 (m, 2H), 1.56-1.49 (m, 2H), 1.37-1.16 (m, 12H).



**Figure S10.** The stability of polymer FL intensity with different pH values