Supporting Information

ZIF-based carbon dots with lysosome-Golgi transport property as visualized platform for tumour in-deep therapy via hierarchical size/charge dual-transform and transcytosis

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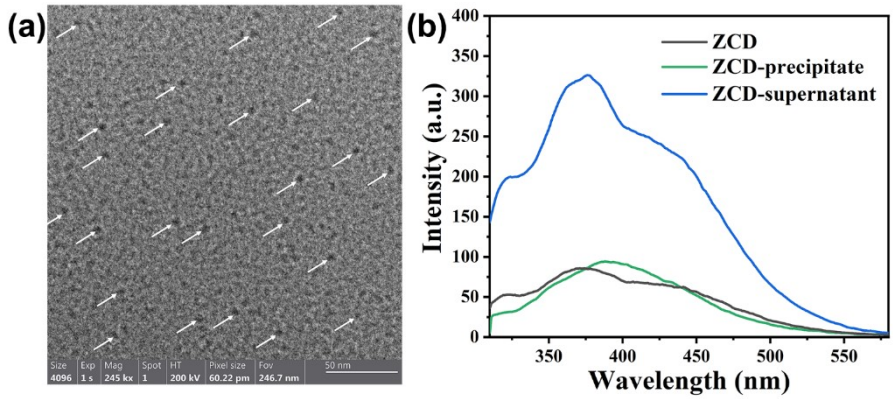

Fig. S1 Characterization of the supernatant after centrifugation of ZCD. The TEM image of ZCD supernatant after centrifugation (a). The fluorescence spectra of uncentrifuged ZCD, centrifuged ZCD precipitate and centrifuged ZCD supernatant (b).

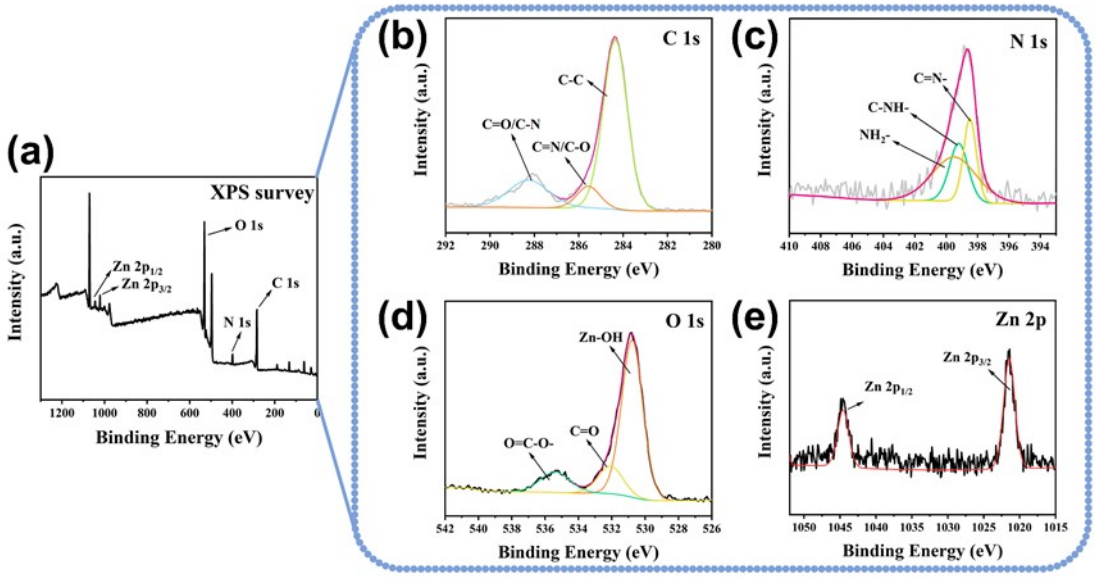

Fig. S2 XPS analysis of ZCD and each element it contains. (a) is the XPS survey of ZCD, (b), (c), (d), (e) are C1s, N1s, O1s and Zn2p, respectively.

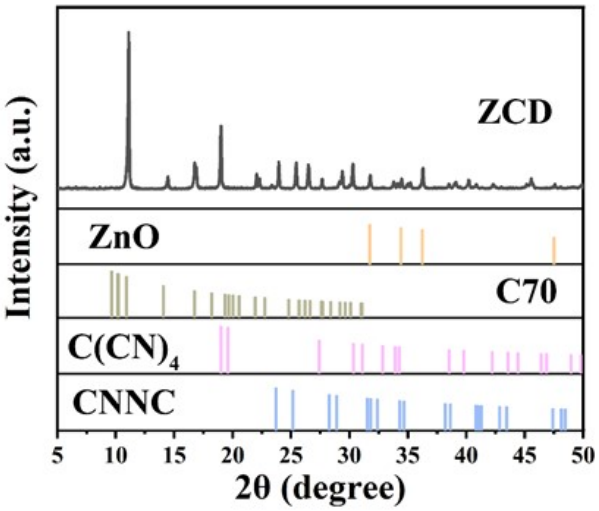

Fig. S3 The XRD diffraction patterns of as-prepared ZCD.

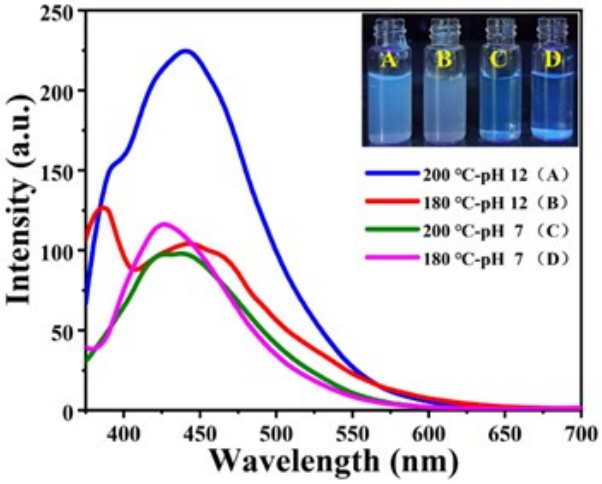

Fig. S4 The fluorescence spectra of ZCD synthesized at different pH values and different temperature conditions.

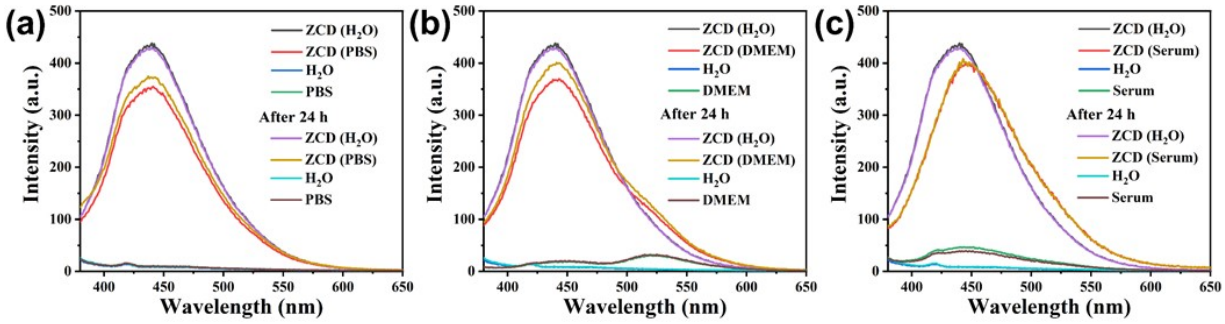

Fig. S5 The fluorescence stability of ZCD. (a) The fluorescence of ZCD in water and PBS at 0 h and 24 h. (b) The fluorescence of ZCD in water and DMEM cell culture medium at 0 h and 24 h. (c) The fluorescence of ZCD in water and serum at 0 h and 24 h.

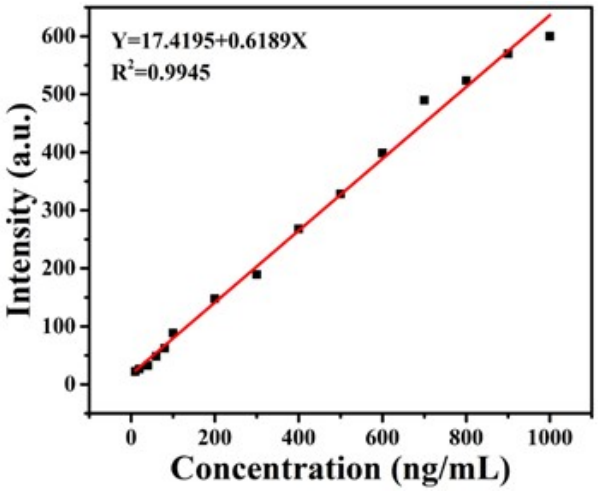

Fig. S6 The standard fluorescence curve of DOX at the concentration from 10 to 1000 ng/mL.

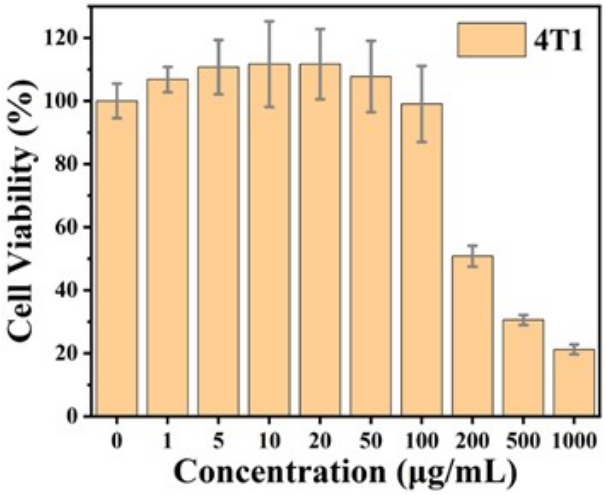

Fig. S7 MTT assay of ZCD at different concentrations after incubating with 4T1 cells.

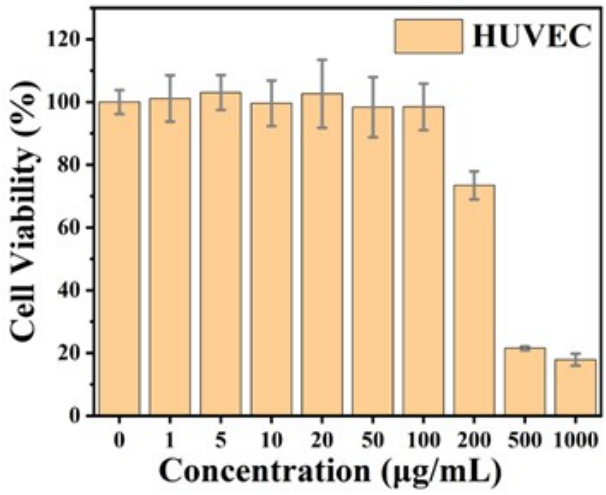

Fig. S8 MTT assay of ZCD at different concentrations after incubating with HUVEC cells.

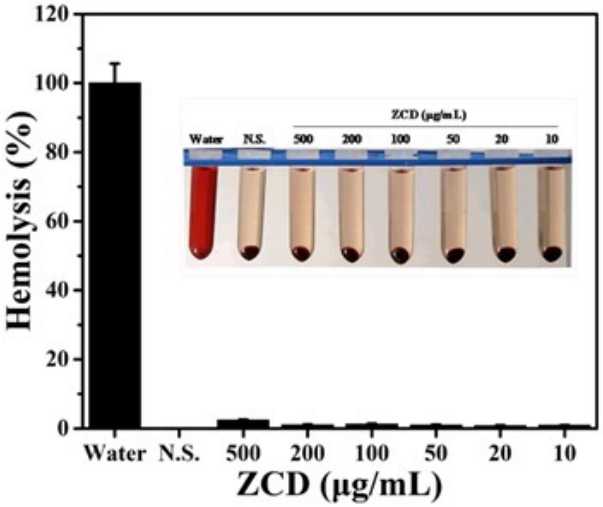

Fig. S9 The hemolysis test of ZCD nanoparticles at different concentrations.

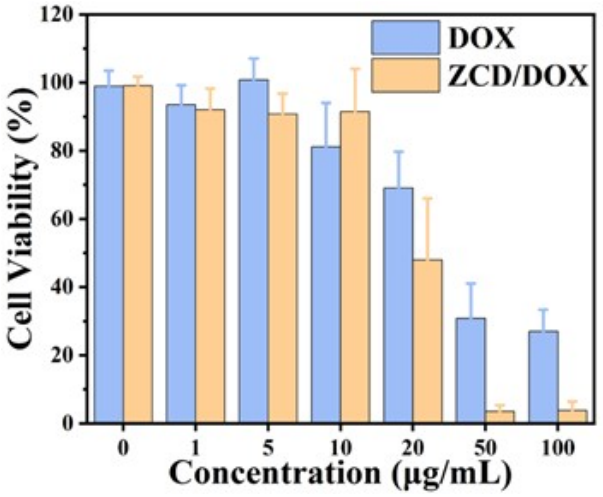

Fig. S10 In vitro toxicity of different concentrations of DOX and ZCD/DOX to 4T1 cells after incubating for 24 h measured by MTT assay.

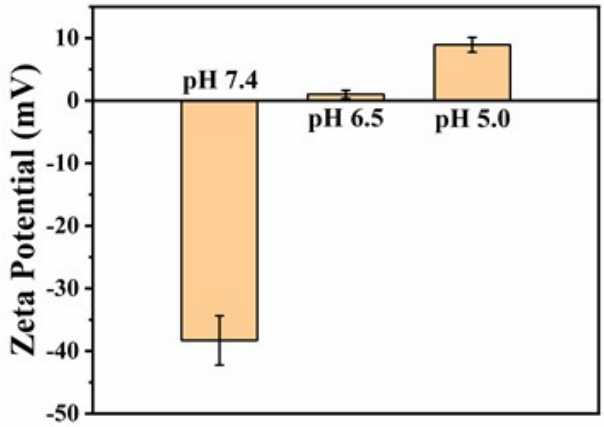

Fig. S11 Zeta potential of ZCD under different pH conditions (pH 7.4, 6.5 and 5.0).

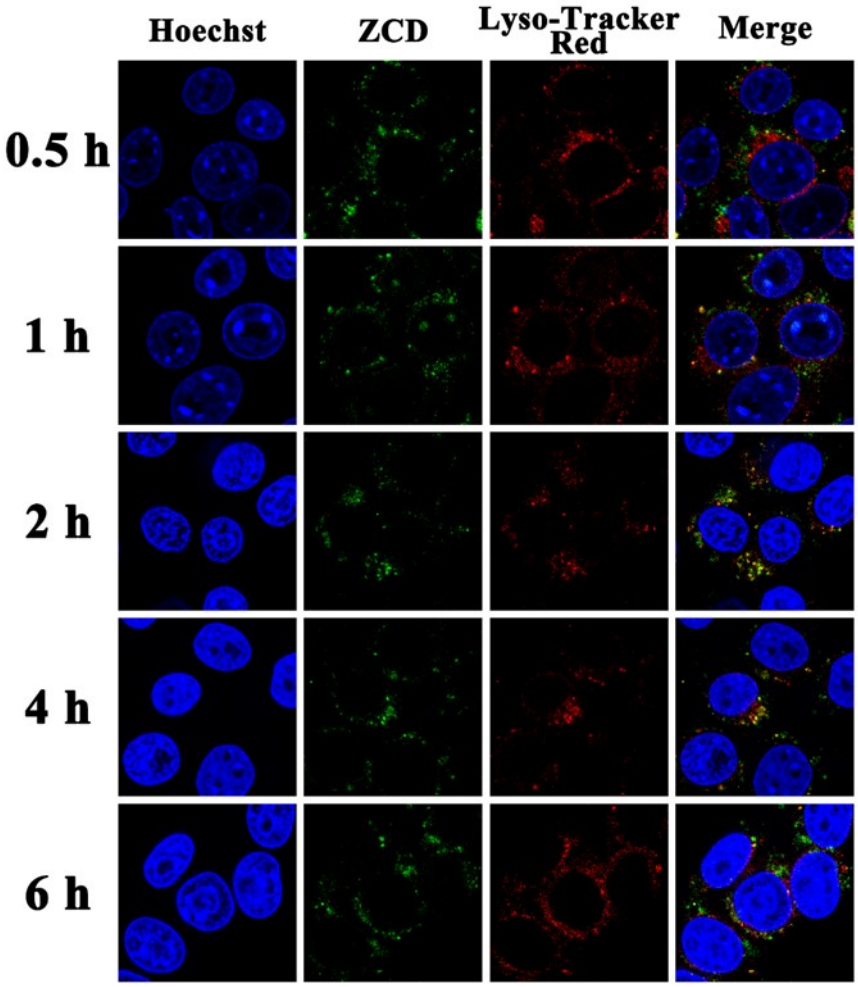

Fig. S12 Colocalization of ZCD and Lyso-Tracker Red at different times. (Blue represents cell nucleus dyed with Hoechst, green represents the fluorescence of ZCD, red represents the fluorescence of lysosome dyed with Lyso-Tracker Red).

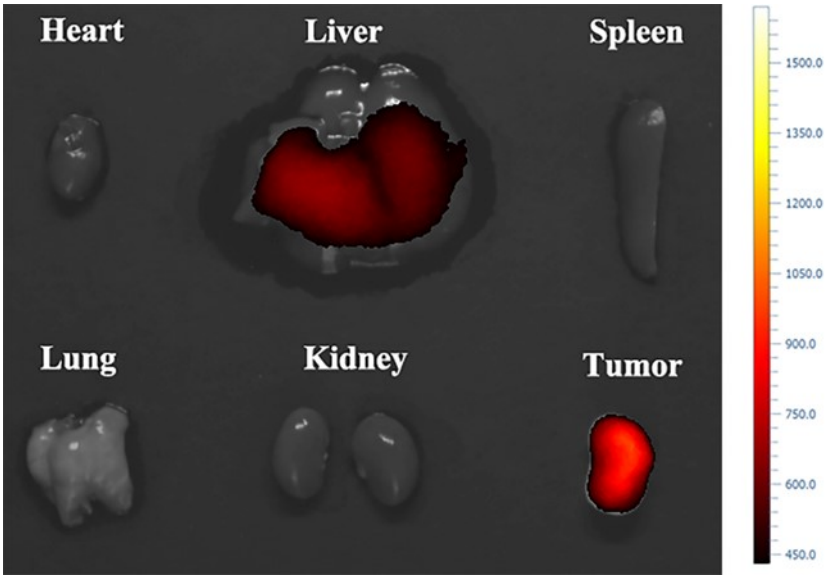

Fig. S13 In vivo fluorescence images of main organs and tumor tissue after 144 h of injection ZCD/ICG.

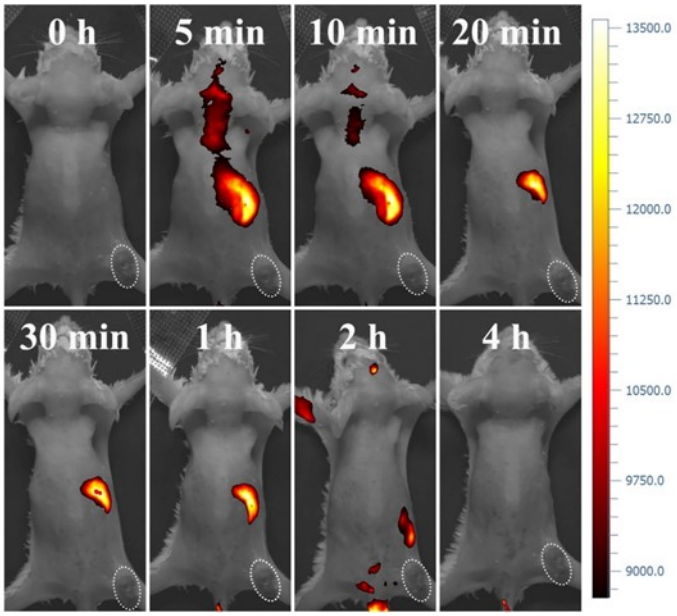

Fig. S14 The living fluorescence images of BALB/c mice injected with free ICG for different time periods.

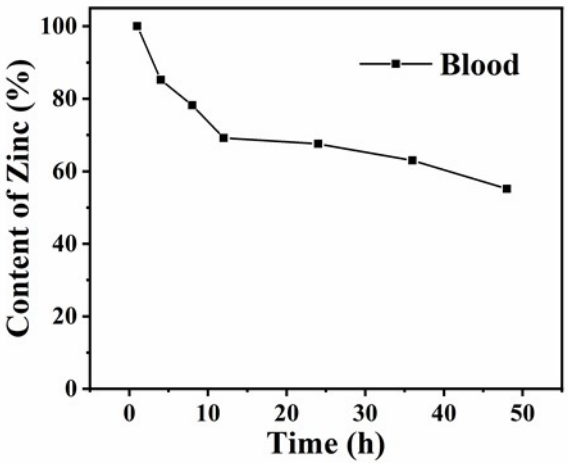

Fig. S15 The content of zinc in the blood of mice at different times after injection of ZCD.

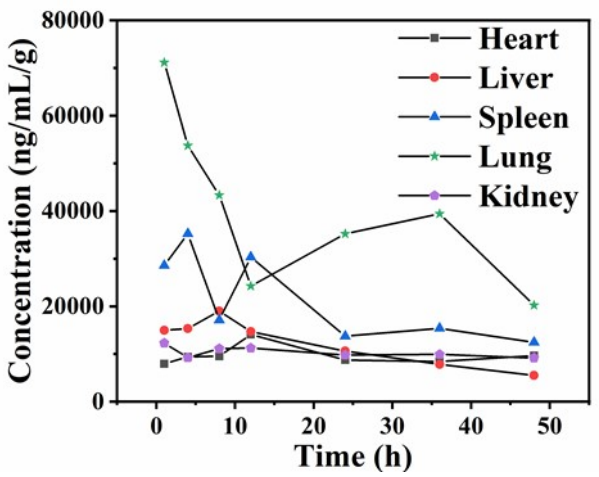

Fig. S16 The content of zinc in the main organs of mice at different times after injection of ZCD.

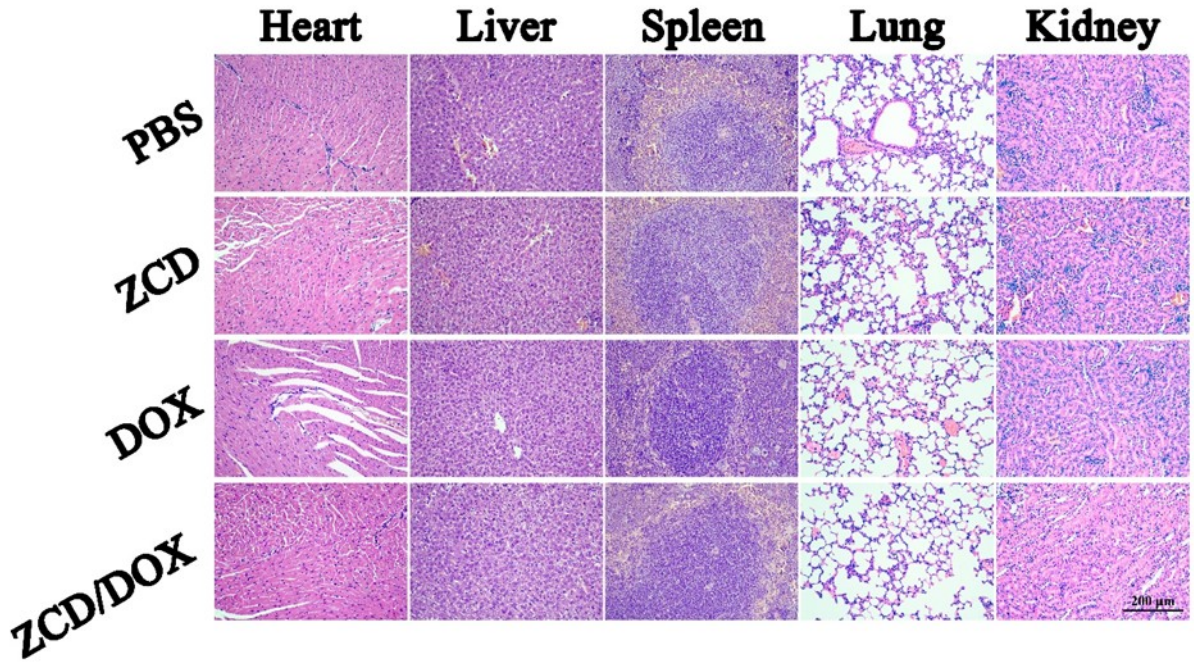

Fig. S17 H&E staining of heart, liver, spleen, lung, and kidney after treatment with PBS, ZCD, DOX and ZCD/DOX.