Supplementary information

for

Iron-containing ferritin-based nanosensitizer for synergistic ferroptosis/sono-photodynamic cancer therapy

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Fig. S1. Thin layer chromatography (TLC) of FC, DHA, FD and FCD. FC, FD and FCD were first concentrated with an ultrafiltration tube to increase the concentration of DHA and diluted with chloroform. The FC, FD, FCD and DHA reference solution were spotted on the same thin-layer plate respectively, developed with a developing system of 1,2-dichloroethane:ethyl ether solution (80:20, v/v), and sprayed with 5% vanillin sulfate ethanol solution immediately after drying. Finally, the thin-layer plate was put in a 75 °C oven for about 10 min until the spots became clear.

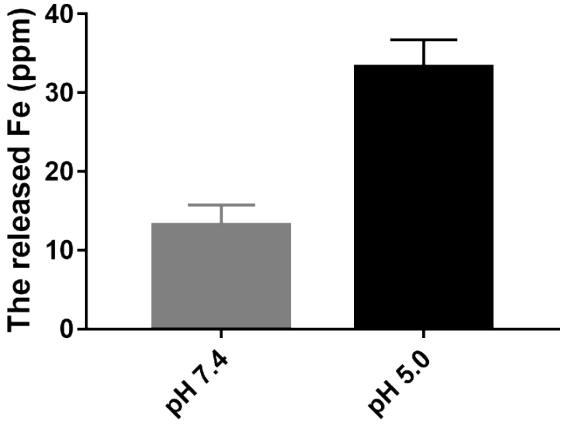

Fig. S2. Acidic condition-triggered release of iron ions from FCD measured by ICP-MS.

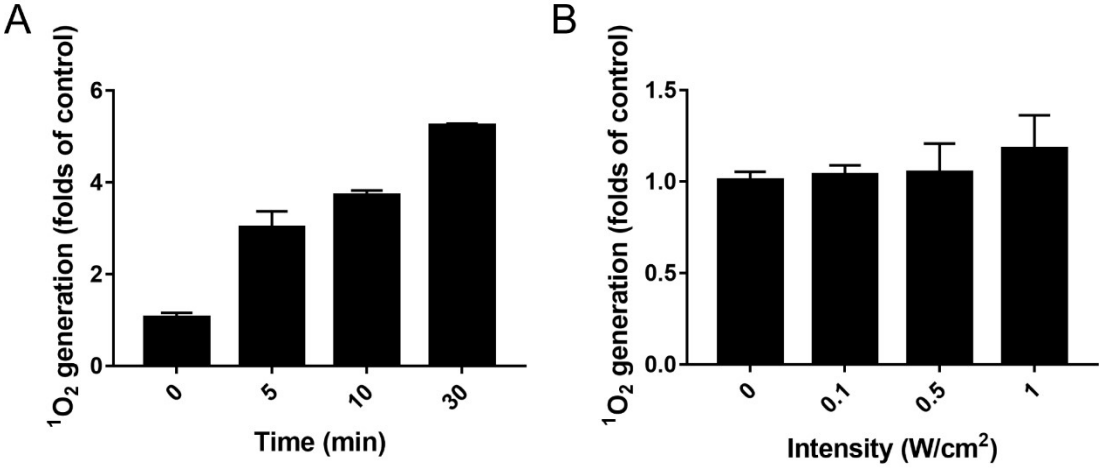

Fig. S3. (A) The $^1O_2$ generated by FCD under laser with different light exposure time evaluated by SOSG. (B) The $^1O_2$ generated by FCD under ultrasound with different ultrasonic intensities.

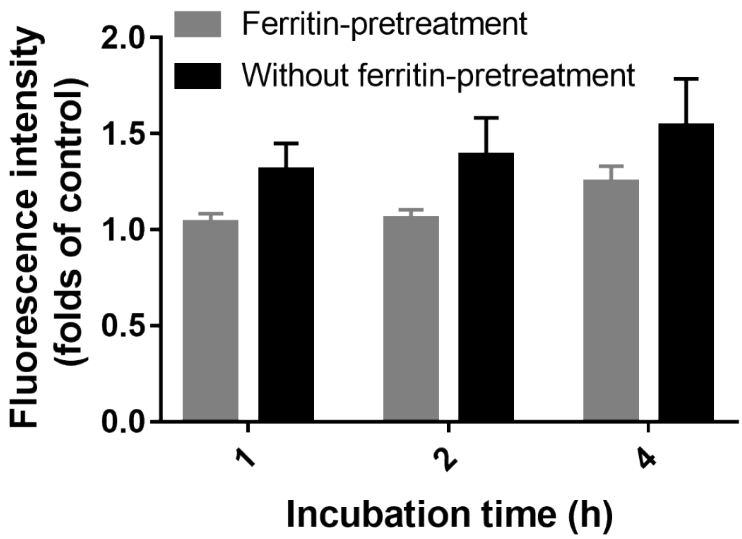

Fig. S4. The effect of ferritin pre-treatment on cellular uptake of FCD by MCF-7 cells.

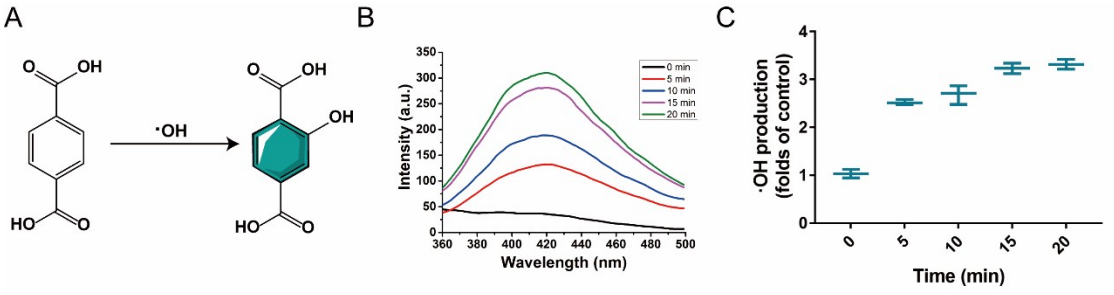

Fig. S5. (A) Oxidation of terephthalic acid (TA) to 2-hydroxy-terephthalic acid (TAOH) by •OH. (B) Fluorescence spectra of TA-OH for detection of •OH generated by ferritin. (C) Detection of •OH generated by ferritin.

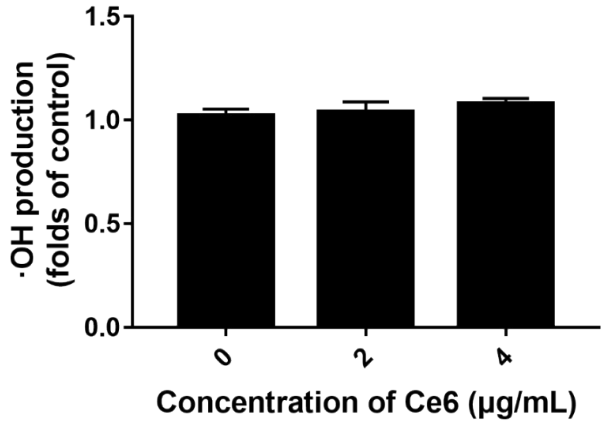

Fig. S6. Detection of •OH generated by Ce6 in MCF-7 cells.

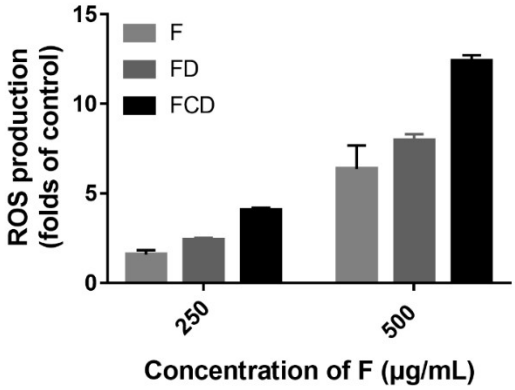

Fig. S7. ROS generation evaluated by the measurement of DCFH-DA fluorescent probe.

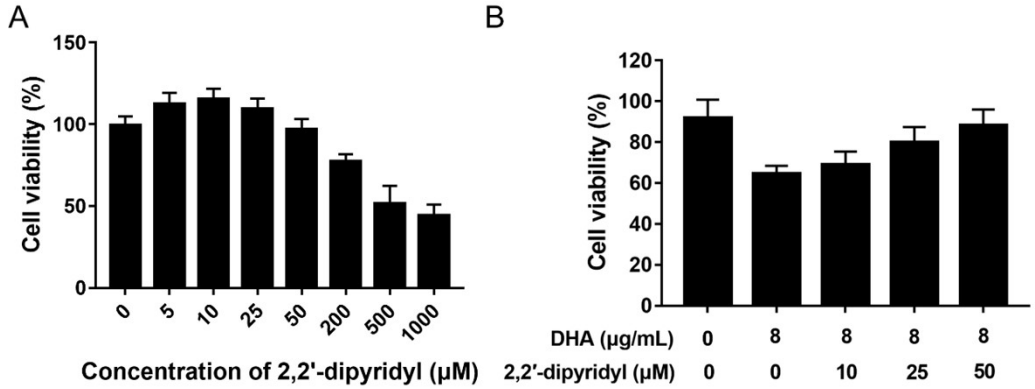

Fig. S8. (A) Cell viability of MCF-7 cells treated with different concentrations of 2,2′-dipyridyl. (B) Cell viability of MCF-7 cells treated with DHA under different concentrations of 2,2′-dipyridyl.

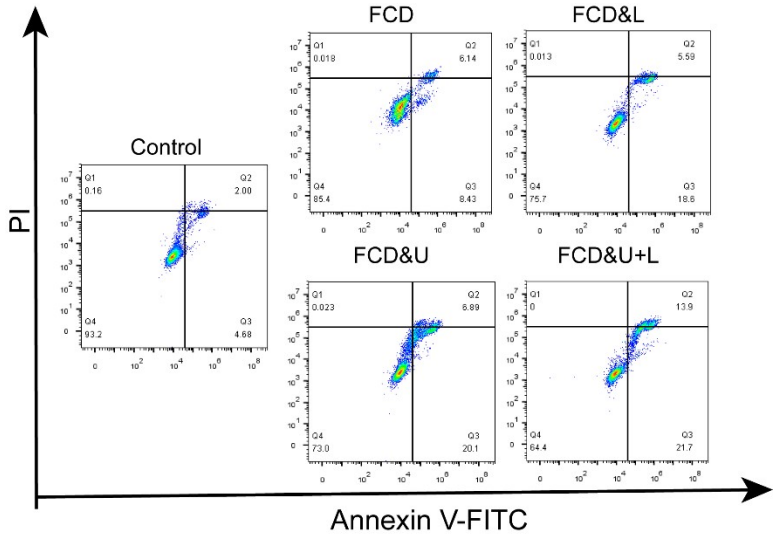

Fig. S9. Cell apoptosis analysis of MCF-7 cells treated with FCD under different irradiations.