Supporting Information

GSH-Depleting Metal-Polyphenol-Network Nanoparticles with Dual Enzyme Activities Endow Enhanced Ferroptosis

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Figure S1. SEM images of Ce-aMOFs (A) and MEFs (B) nanoparticles, with a scale bar of 100 nm.
Figure S2. DLS analysis results for Ce-aMOFs and MEFs (100 \( \mu g \) mL\(^{-1} \), n=3).
Figure S3. Stability of MEFs in DI water and RPMI 1640 basic medium at room temperature, (n=3).
Figure S4. Zeta potentials of Ce-aMOFs and MEFs at pH 7.4 (n=3).
Figure S5. XRD patterns for Ce-aMOFs and MEFs.
Figure S6. FT-IR spectra of Ce-aMOFs and MEFs.
Figure S7. UV-vis-NIR absorption spectra of 100 μg mL⁻¹ Ce-aMOFs and MEFs.
Figure S8. X-ray photoelectron spectroscopy survey spectrum of Ce-aMOFs and MEFs (Elements: C 1s, O 1s, S 2p, Cu 2p, Ce 3d).
Figure S9. TGA analysis for MEFs in O\textsubscript{2} gas purging at a flow rate of 20 mL min\textsuperscript{-1}. 
Figure S10. Inhibition rate of Ce-aMOFs (0-100 μg mL⁻¹) against the production of WST formazan.
Figure S11. UV/vis-NIR absorption spectra of the MEFs solutions (200 μg mL⁻¹) after releasing Fe³⁺ at various pH values (A: pH 7.4, B: pH 6.5, C: pH 5.0). Inset: Prussian blue staining of the supernatant acquired at different incubation times.
Figure S12. TEM image of MEFs degrading in pH 5.0 pbs for 12h, with a scale bar of 100 nm.
Figure S13. GSH depletion by MEFs with different concentration levels (0-500 μg mL⁻¹) in 8 h, as characterized by the absorbance at 412 nm.
Figure S14. (A) The time-dependent production of Fe$^{2+}$ from 500 μg/mL MEFs in the presence of GSH (5 mM). (B) The variation of UV/vis absorption spectra of the 1,10-phenanthroline hydrate-Fe$^{2+}$ complexes after treatment with MEFs (0-500 μg mL$^{-1}$) for 6 h in an environment containing GSH (5 mM).
Figure S15. Valence status of Fe element in MEFs after reaction with GSH for 1h.
Figure S16. MB degradation by $\cdot$OH generated under 100 μg mL$^{-1}$ Ce-aMOFs and MEFs with an incubation time of 2 h. Control group: GSH (100 μL, 1 mM), H$_2$O$_2$ (80 μL, 100 mM) and MB (10 μL, 100 μg mL$^{-1}$) in 500 μL aqueous solution.
Figure S17. Degradation of MB by the MEFs-mediated Fenton-like reaction at different times with a concentration of 100 μg mL⁻¹.
Figure S18. Flow cytometry analysis of ROS generation after treated with Ce-aMOFs and MEFs (100 μg mL⁻¹) for 8 h.
Figure S19. 4T1 cell viability after incubating with 20-200 μg mL⁻¹ of Ce-aMOFs for 24 h and 48h.
Figure S20. Relative cell viabilities of MEFs-treated 4T1 cells in the presence of vitamin E (VE).
Figure S21. NADPH levels in 4T1 cells after treatment with Ce-aMOFs (20-100 μg mL\(^{-1}\)) for 6 h.
Figure S22. Hemolysis of MEFs (5-150 μg mL⁻¹) after incubation with red blood cells. PBS: negative control, deionized water: positive control. Inset: hemolysis photographs after centrifugation.
Figure S23. Photographs of 4T1 tumor-bearing mice from different treatment groups after 14 days of treatments. (I) PBS (pH 7.4, 10 mM, 50 μL), (II) Ce-aMOFs solution (2 mg mL$^{-1}$, 50 μL), (III) MEFs solution (2 mg mL$^{-1}$, 50 μL).
Figure S24. Images of H&E-stained major organ slices of mice from different treatment groups after 16 days of treatments. Scale bar 50 μm.