

Electronic Supplementary Information (ESI)

Dual-path modulation of hydrogen peroxide to ameliorate hypoxia for enhancing photodynamic/starvation synergistic therapy

Xinhe Liu,^a Jing Liu,^a Shangyu Chen,^c Yuxin Xie,^a Quli Fan,^c Jiahong Zhou,^d Jianchun Bao,^a Tianxiang Wei^{*a,b} and Zhihui Dai^{*a}

^a Jiangsu Collaborative Innovation Center of Biomedical Functional Materials and Jiangsu Key Laboratory of Biofunctional Materials, School of Chemistry and Materials Science, Nanjing Normal University, Nanjing 210023, China

^b School of Environment, Nanjing Normal University, Nanjing 210023, China

^c Key Laboratory for Organic Electronics and Information Displays, Jiangsu National Synergetic Innovation Center for Advanced Materials, Nanjing University of Posts and Telecommunications, Nanjing 210023, China

^d College of Life Sciences, Nanjing Normal University, Nanjing 210023, China

*Corresponding Authors:

E-mail: daizhihui@njnu.edu.cn, **Tel./Fax:** +86-25-85891051

weitian_xiang@126.com

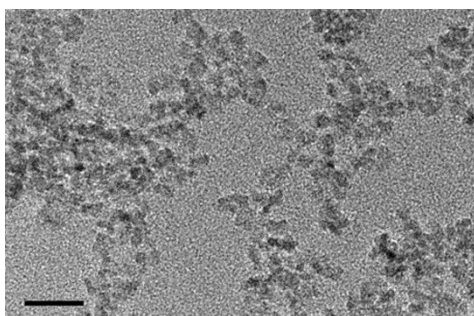


Fig. S1 TEM image of the CeO₂-PEG-NH₂. Scale bar: 20 nm.

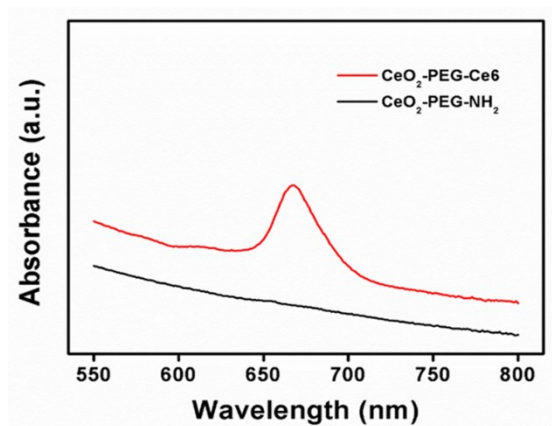


Fig. S2 UV-vis absorption spectra of CeO₂-PEG-NH₂ and CeO₂-PEG-Ce6.

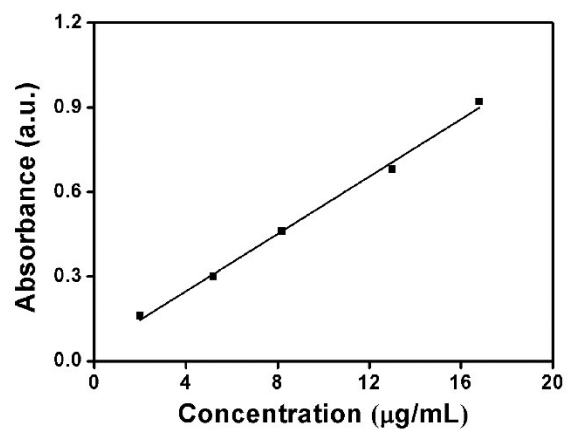


Fig. S3 The linear relationship between concentration and absorbance of Ce6.

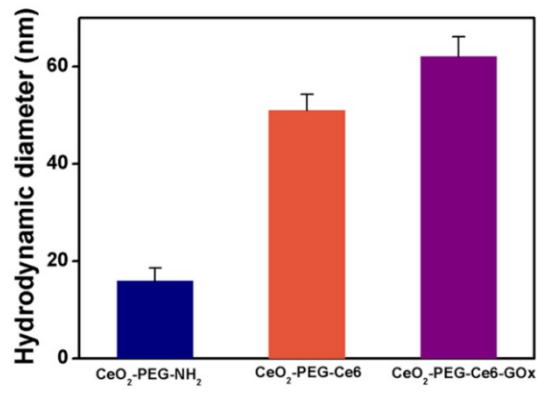


Fig. S4 Hydrodynamic diameters of CeO₂-PEG-NH₂, CeO₂-PEG-Ce6 and CeO₂-PEG-Ce6-GOx.

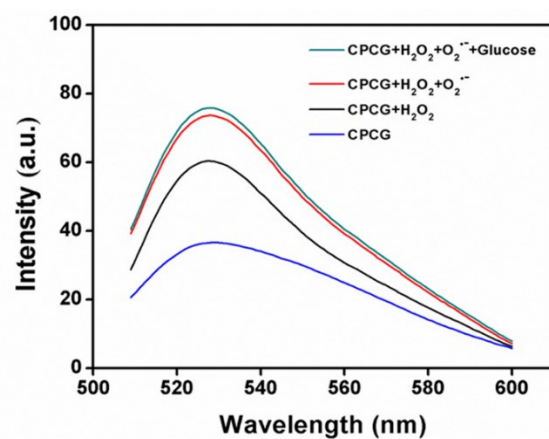


Fig. S5 The generation of singlet oxygen determining with SOSG in the different samples after irradiation (660 nm, 200 mW cm⁻², 6 min) under hypoxic condition.

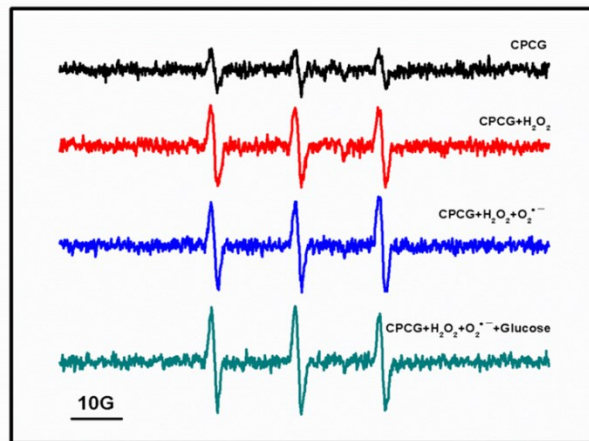


Fig. S6 ESR spectra of different samples with TEMP as the spin trap with laser light irradiation under hypoxic environment.

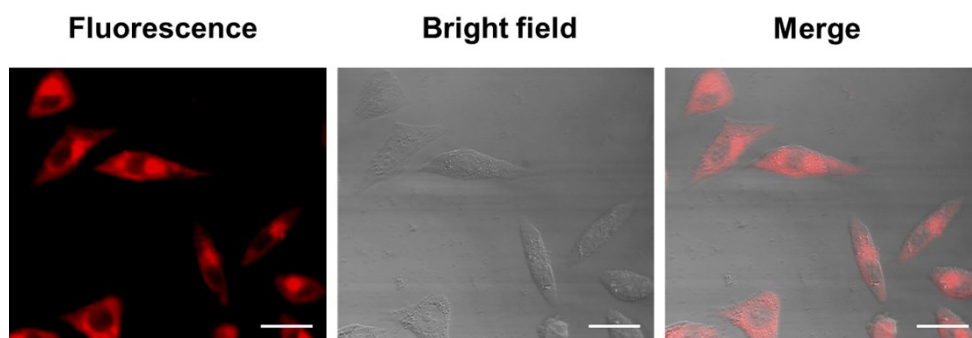


Fig. S7 Confocal images of HeLa cells incubated with CPG. Scale bar: 20 μm .

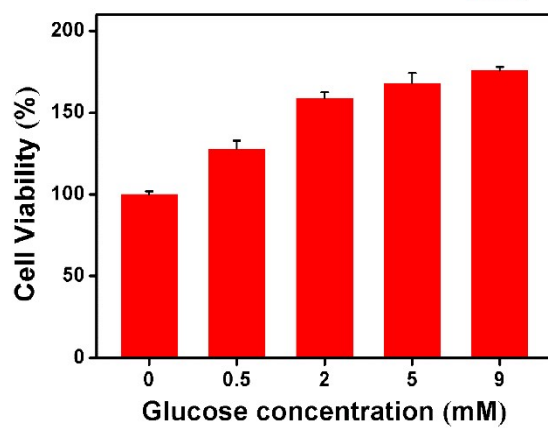


Fig. S8 The cell viability of HeLa cells in different concentrations of glucose.

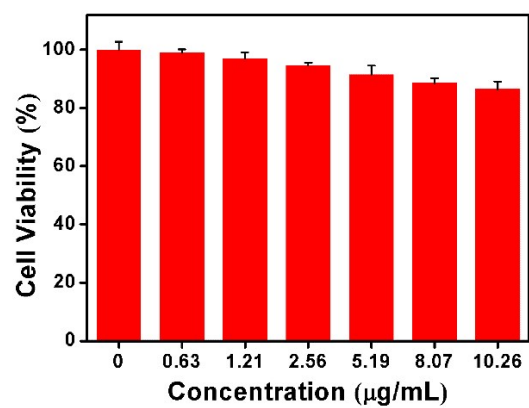


Fig. S9 Relative cell viability of HeLa cells incubated with different concentrations of free Ce6 under 660 nm laser light irradiation (200 mW cm^{-2}) in hypoxic environment.

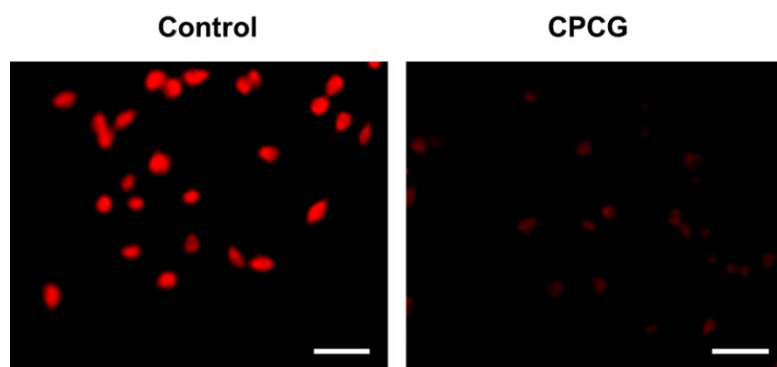


Fig. S10 Confocal fluorescence images of [Ru(dpp)₃]Cl₂ in HeLa cells treated with different conditions. Scale bar: 50 μm.