

Supplementary Information

A glutathione-activatable photodynamic and fluorescent imaging monochromatic photosensitizer

Zhensheng Li,^{a,b} Yang Liu,^{b,c} Li Chen,^c Xiuli Hu^b and Zhigang Xie^{*b}

^aSchool of Chemistry and Chemical Engineering, Xuchang University, 88 Bayi Street, Xuchang 461000, P. R. China

^bState Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, 5625 Renmin Street, Changchun 130022, P. R. China

^cDepartment of Chemistry, Northeast Normal University, 5268 Renmin Street, Changchun 130024, P. R. China

* corresponding authors: xiez@ciac.ac.cn

Contents:

- 1) Figure S1: ¹H NMR spectra of **1** in CDCl₃.
- 2) Figure S2: ¹H NMR spectra of **2** in CDCl₃.
- 3) Figure S3: ¹H NMR spectra of **3** in CDCl₃.
- 4) Figure S4: ¹H NMR spectra of **4** in CDCl₃.
- 5) Figure S5: ¹H NMR spectra of **NO₂-BDP** in CDCl₃.
- 6) Figure S6: ESI-MS spectrum of **NO₂-BDP**.
- 7) Stacked partial ¹H NMR spectra of **NO₂-BDP** (B) and conjugate addition with GSH (A) in d⁶-DMSO.
- 8) ESI-MS spectrum of **NO₂-BDP** after the GSH treatment.
- 9) Figure S9: UV-vis absorption and fluorescence spectra of **NO₂-BDP** (10 μM) in various solvents.
- 10) Figure S10: Time-dependent PL spectra of **NO₂-BDP** (10 μM) upon incubation with GSH (2 mM).

11) Figure S11: Flow cytometric analyses of the probe **NO₂-BDP** (10 μM) incubated HeLa cells for pretreated with NMM (1 mM) or GSH (1 mM).

12) Figure S10: Bright-field images of HepG2 cells with different treatments (a); Cell viability of HepG2 Cells incubated with **NO₂-BDP** and NMM without (b) or with irradiation (c).

13) Figure S11: The dark cytotoxicity of the sensitizers **NO₂-BDP** by the MTT assay.

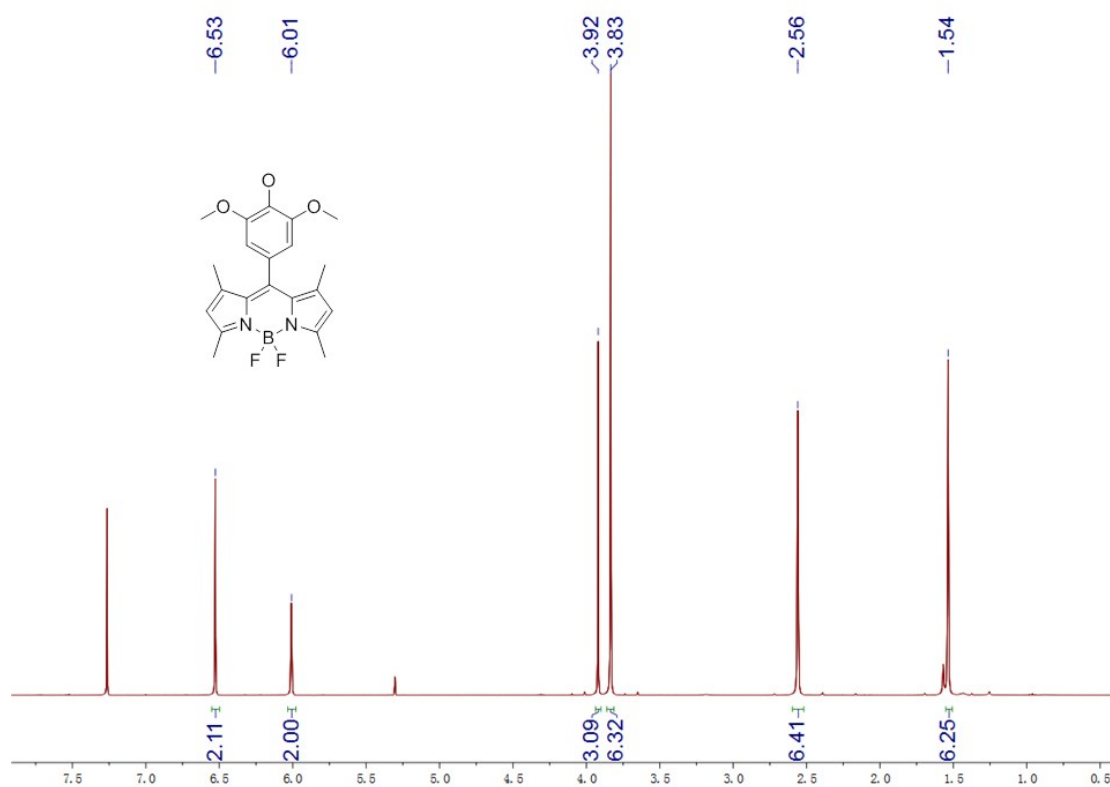


Figure S1. ¹H NMR spectra of **1** in CDCl₃.

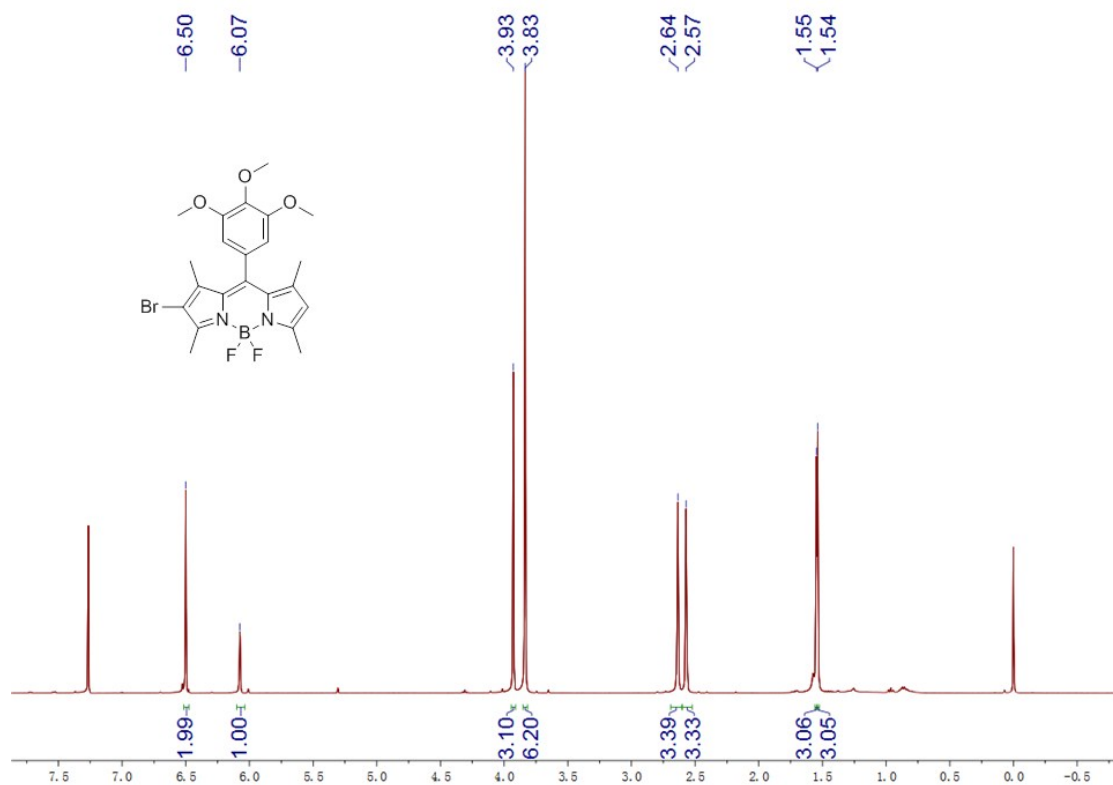


Figure S2. ^1H NMR spectra of **2** in CDCl_3 .

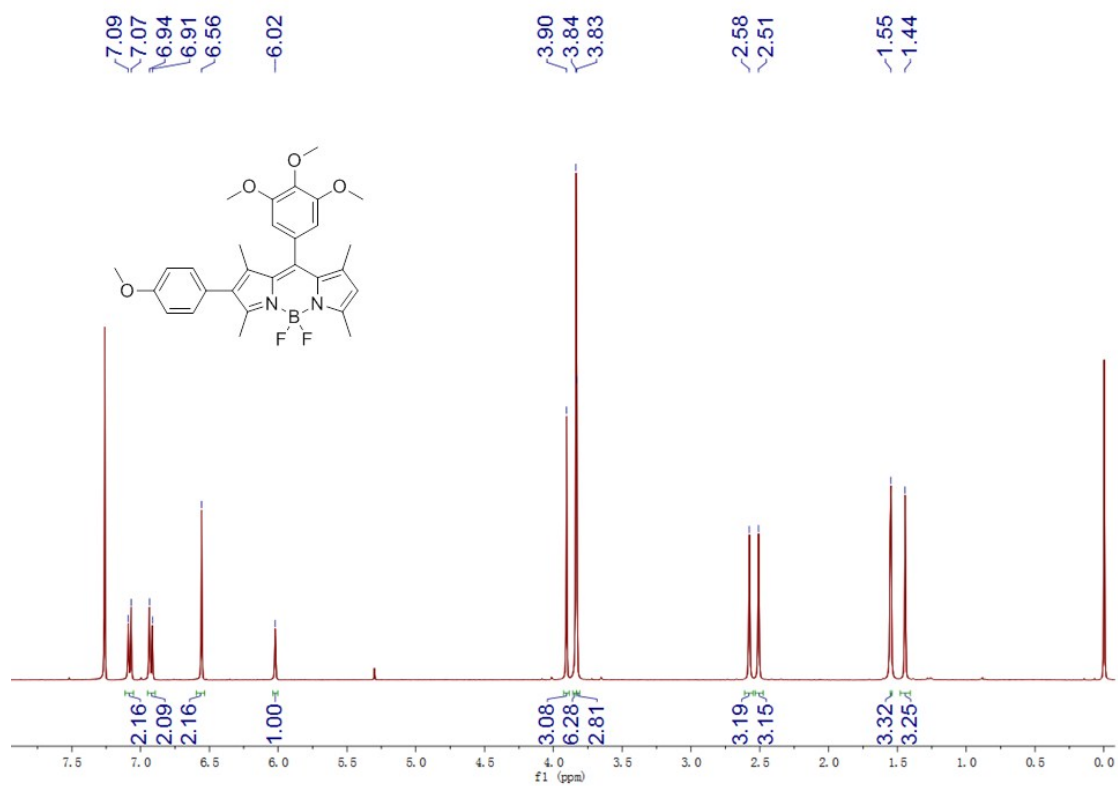


Figure S3. ^1H NMR spectra of **3** in CDCl_3 .

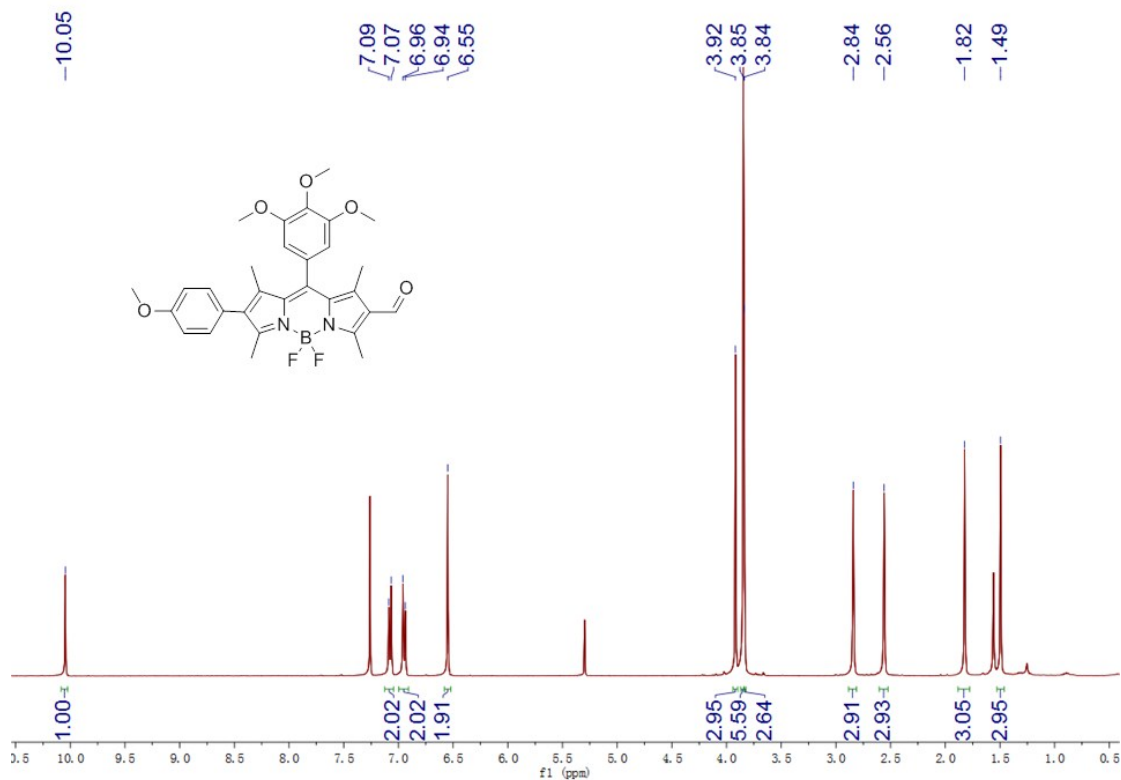


Figure S4. ^1H NMR spectra of **4** in CDCl_3 .

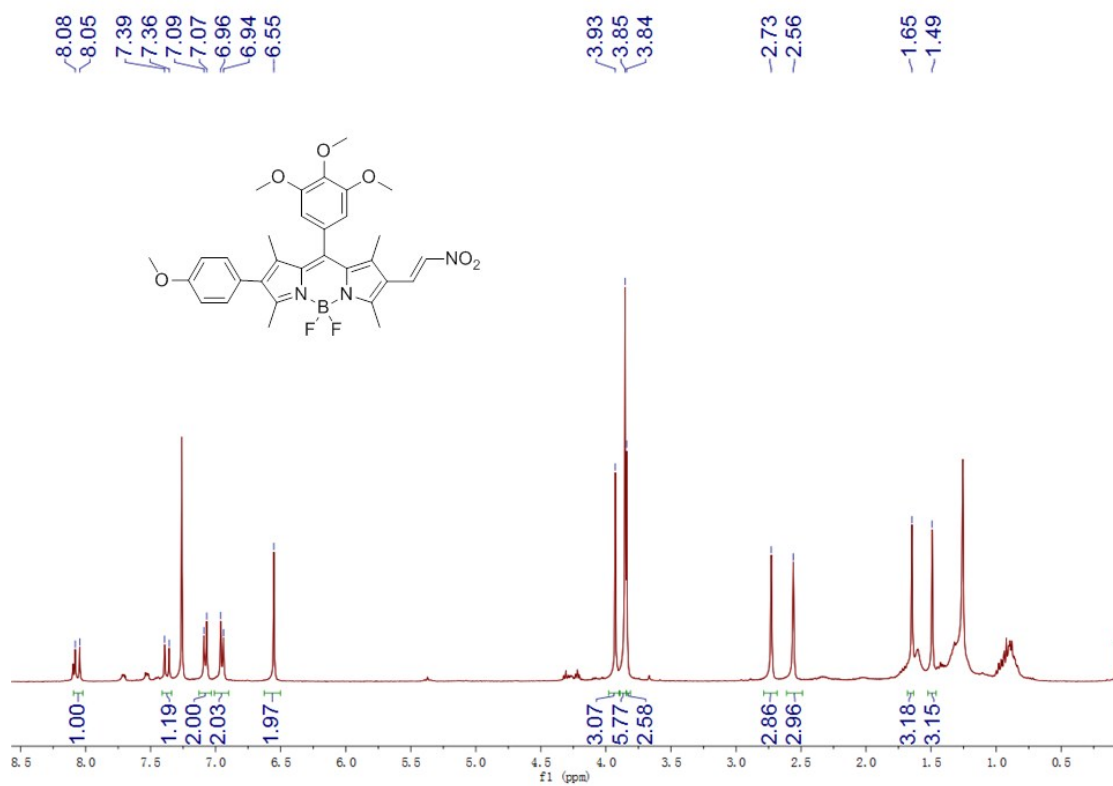


Figure S5. ^1H NMR spectra of **NO₂-BDP** in CDCl_3 .

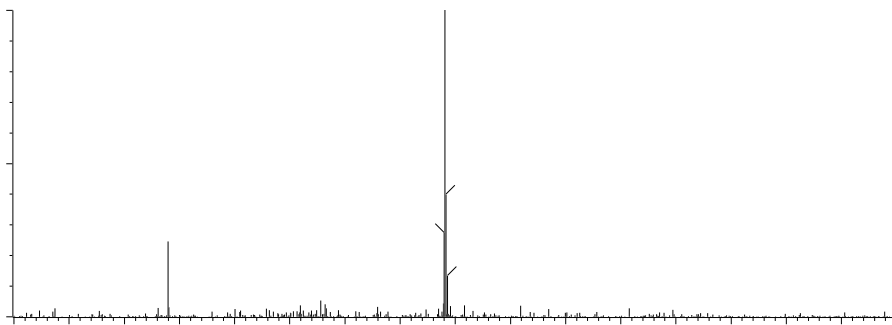


Figure S6. ESI-MS spectrum of **NO₂-BDP**.

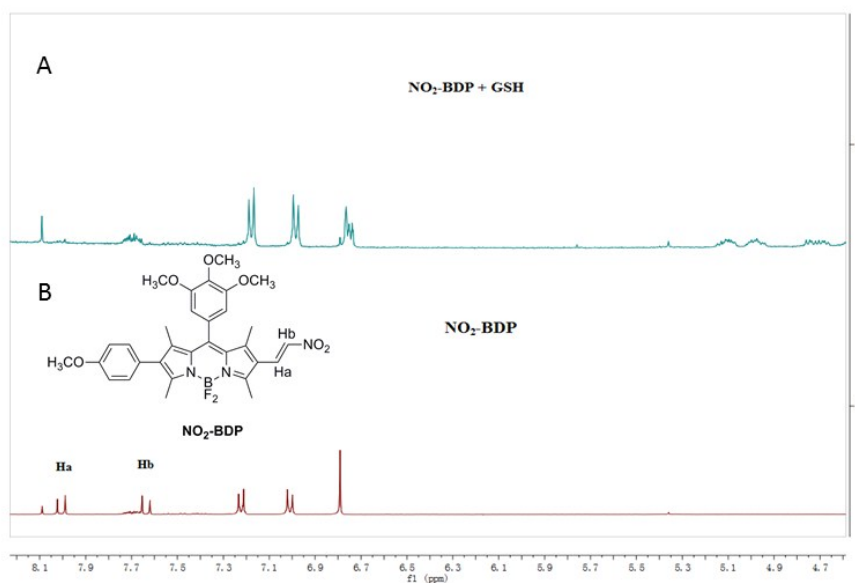


Figure S7. Stacked partial ¹H NMR spectra of **NO₂-BDP** (B) and conjugate addition with GSH (A) in d⁶-DMSO.

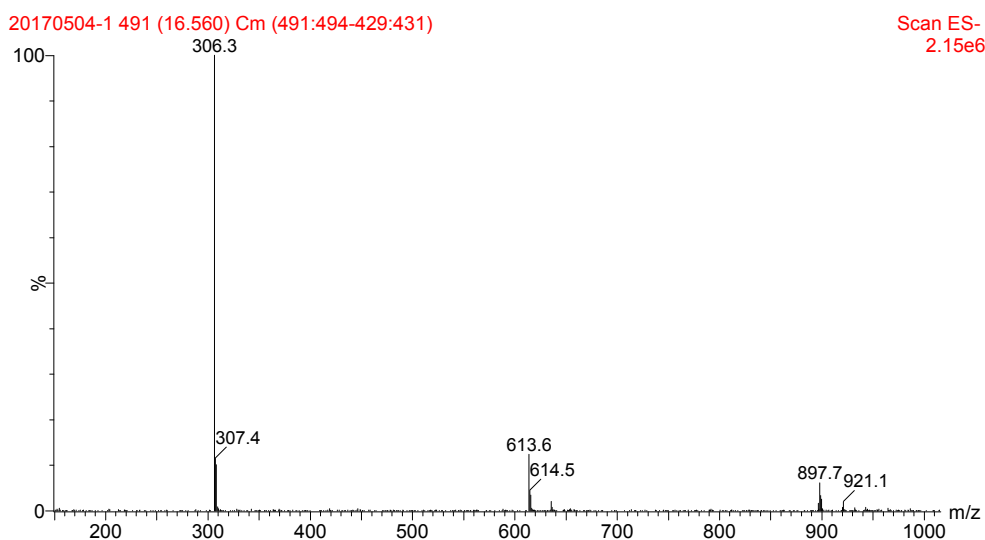


Figure S8. ESI-MS spectrum of **NO₂-BDP** after the GSH treatment.

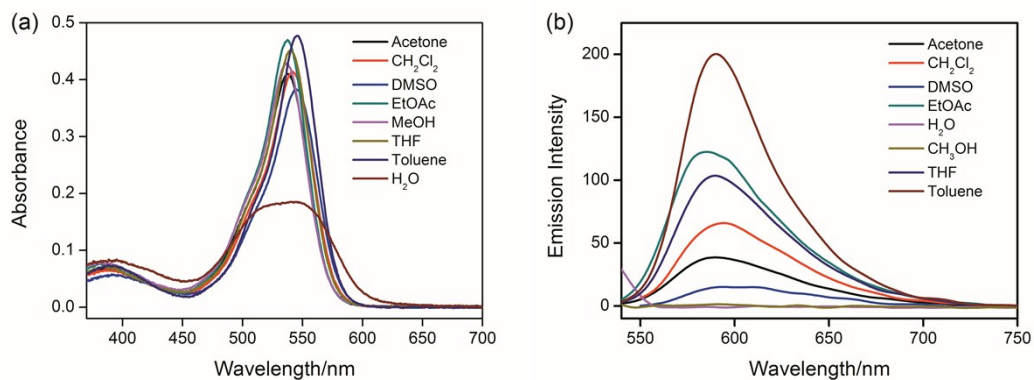


Figure S9. UV-vis absorption and fluorescence spectra of $\text{NO}_2\text{-BDP}$ (10 μM) in various solvents.

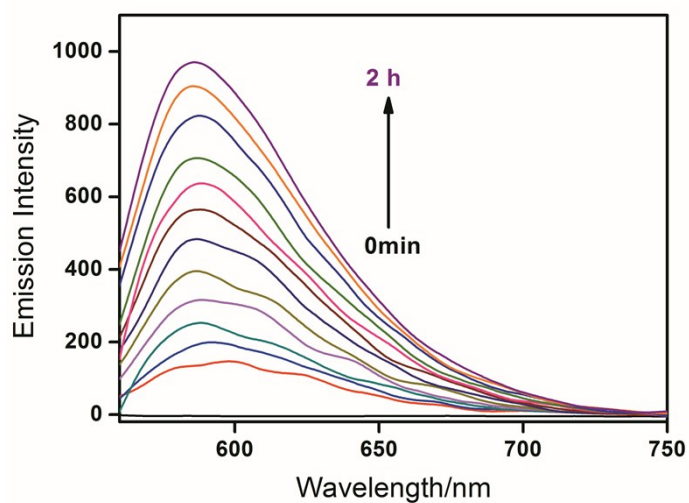


Figure S10. Time-dependent PL spectra of $\text{NO}_2\text{-BDP}$ (10 μM) upon incubation with GSH (2 mM).

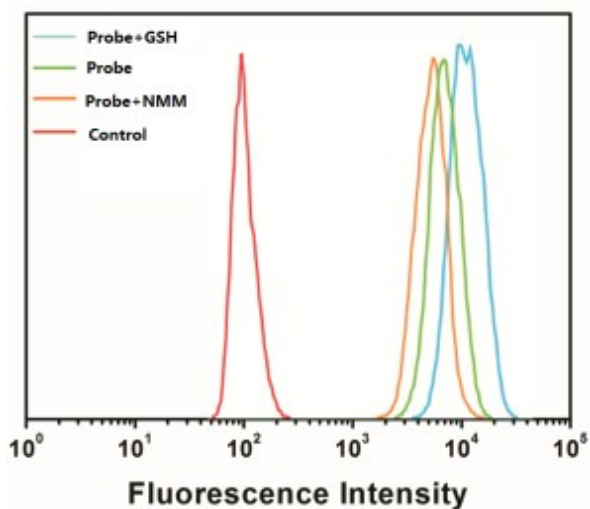


Figure S11. Flow cytometric analyses of the probe $\text{NO}_2\text{-BDP}$ (10 μM) incubated HeLa cells for pretreated with NMM (1 mM) or GSH (1 mM).

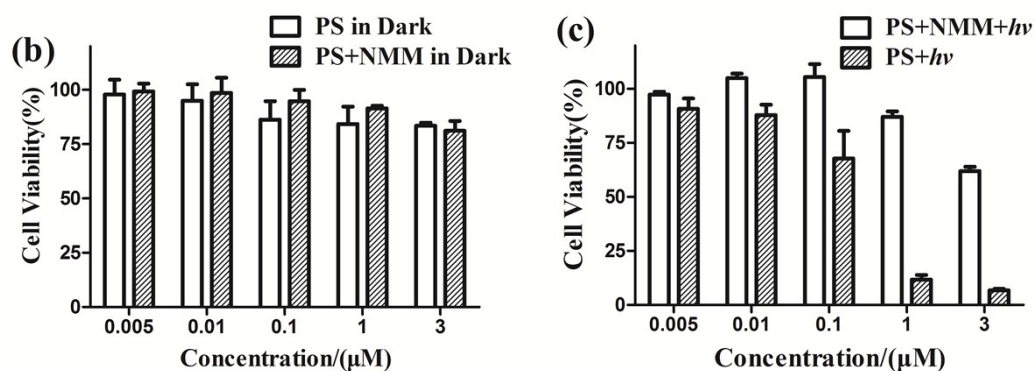
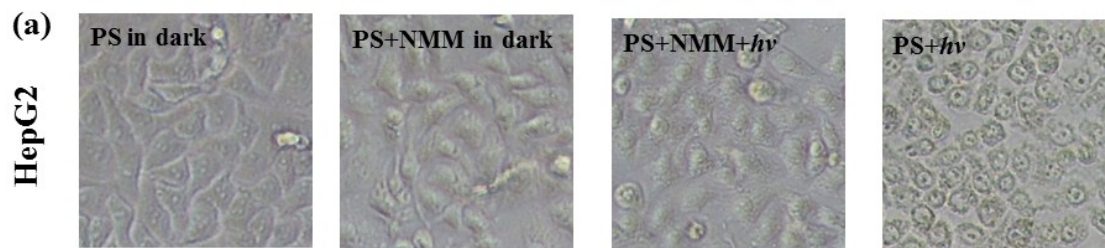


Figure S12. Bright-field images of HepG2 cells with different treatments (a); Cell viability of HepG2 Cells incubated with $\text{NO}_2\text{-BDP}$ and NMM without (b) or with irradiation (c).

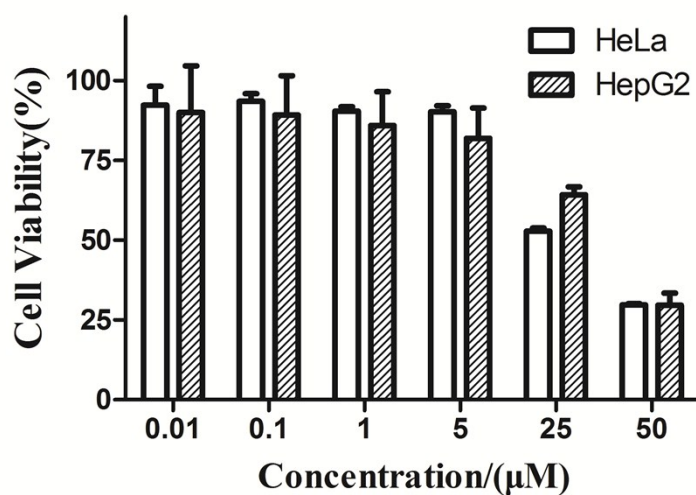


Figure S13. The dark cytotoxicity of the sensitizers $\text{NO}_2\text{-BDP}$ by the MTT assay.