Supporting information

Bodipy Derivatives as Light-induced Free Radical Generator for Hypoxic Cancer Treatment

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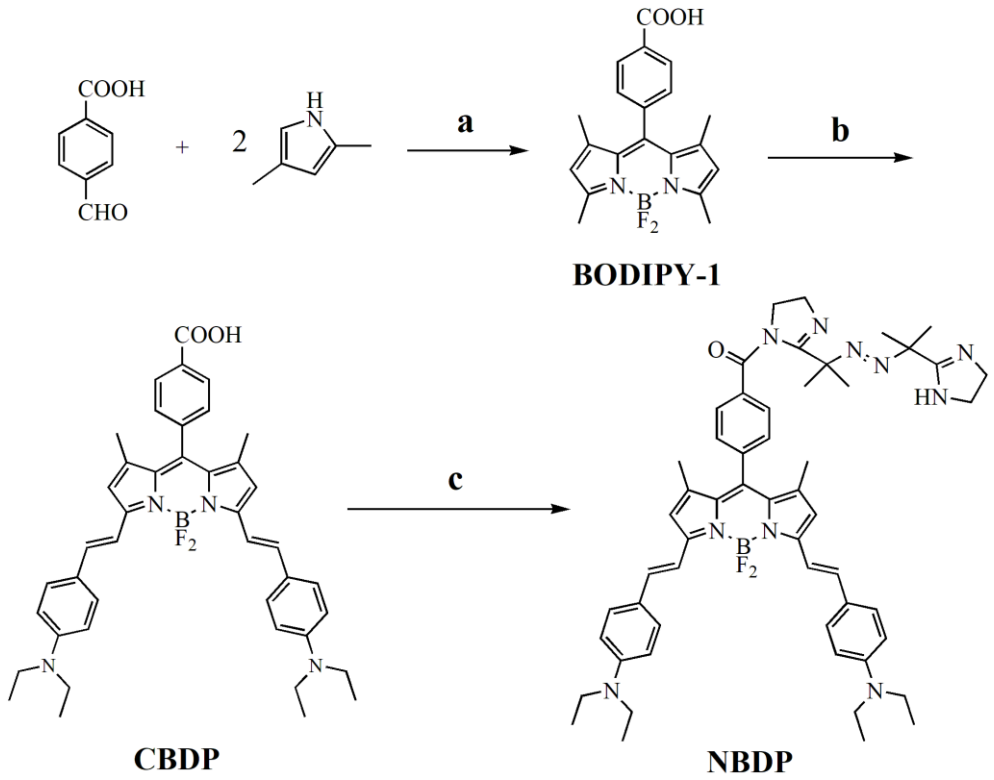

Figure S1. Synthesis procedure of NBDP. Reagents and conditions: (a) 2,4- dimethyl-pyrrole, TFA, 8 h; DDQ, 4 h; Et_3N, BF_3OEt_2, 8 h; (b) p-Diethylaminobenzaldehyde, glacial acetic acid, piperidine, toluene, 8 h; (c) oxalyl chloride; AIBI.

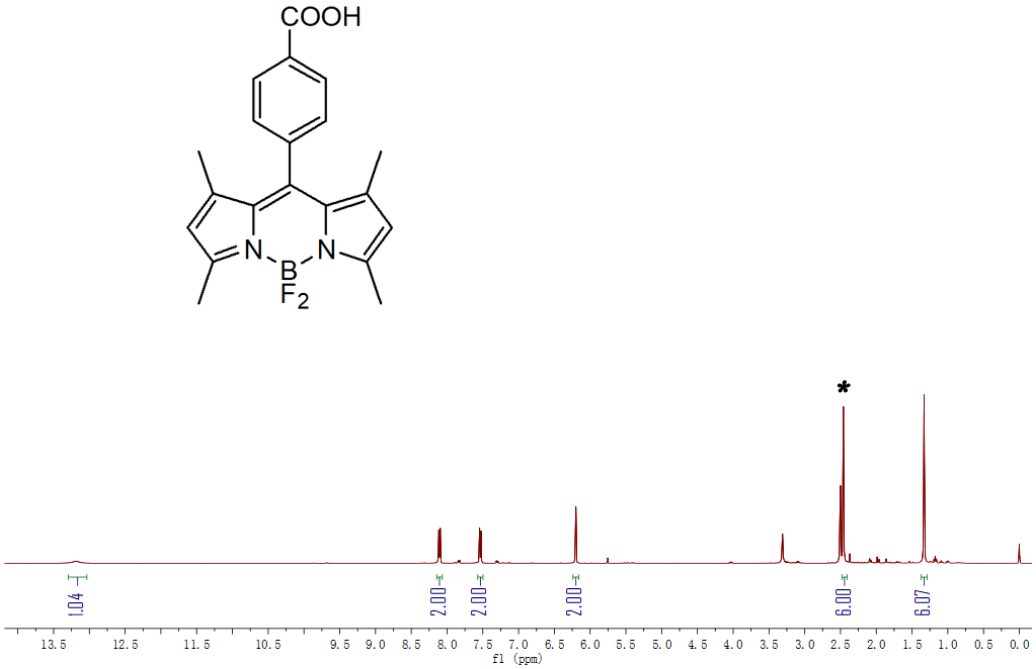

Figure S2. ^{1}H NMR spectra of BODIPY-1 in DMSO. "*" indicate the signal of the solvent.

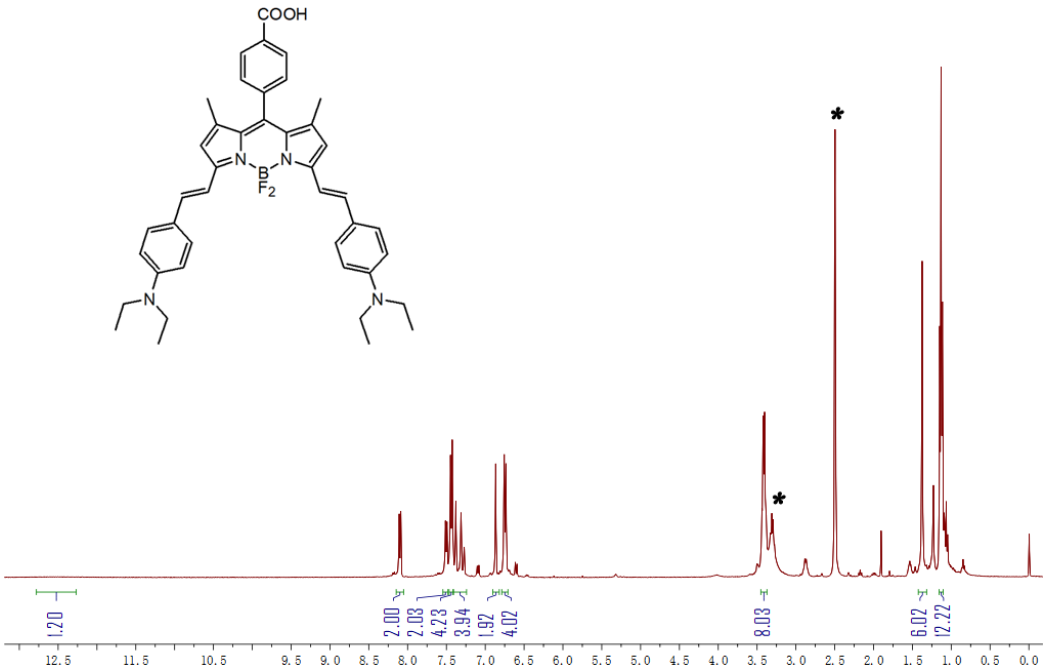

Figure S3. ^{1}H NMR spectra of CBDP in DMSO. "*" indicate the signal of the solvent.

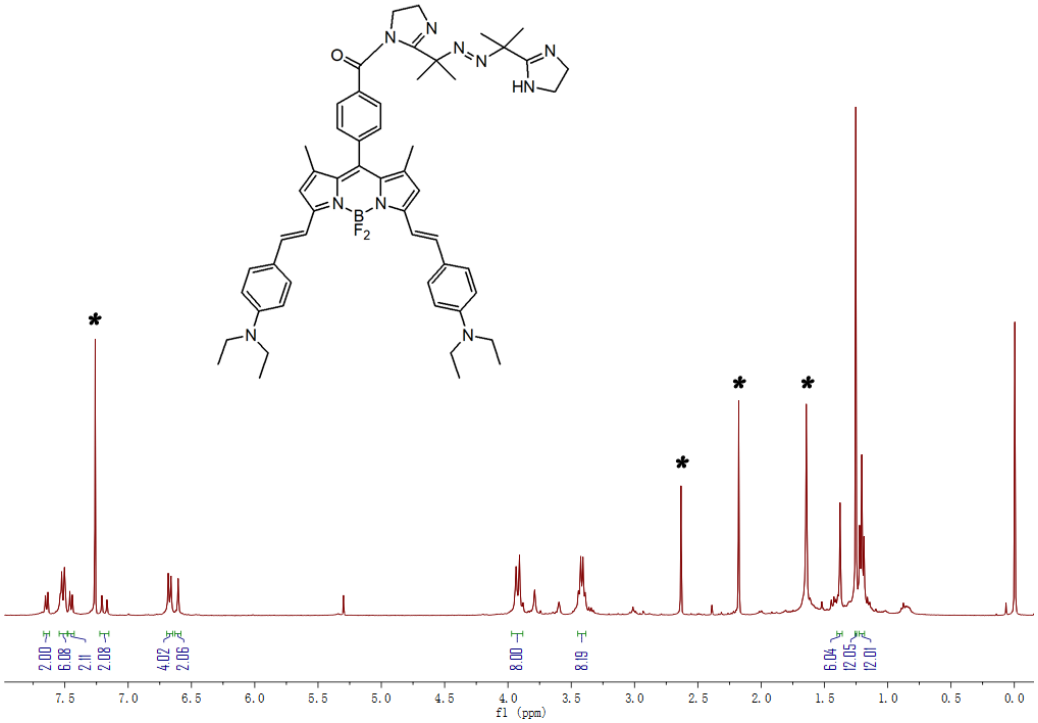

Figure S4. ^{1}H NMR spectra of NBDP in $CDCl_3$. "*" indicate the signal of the solvent.

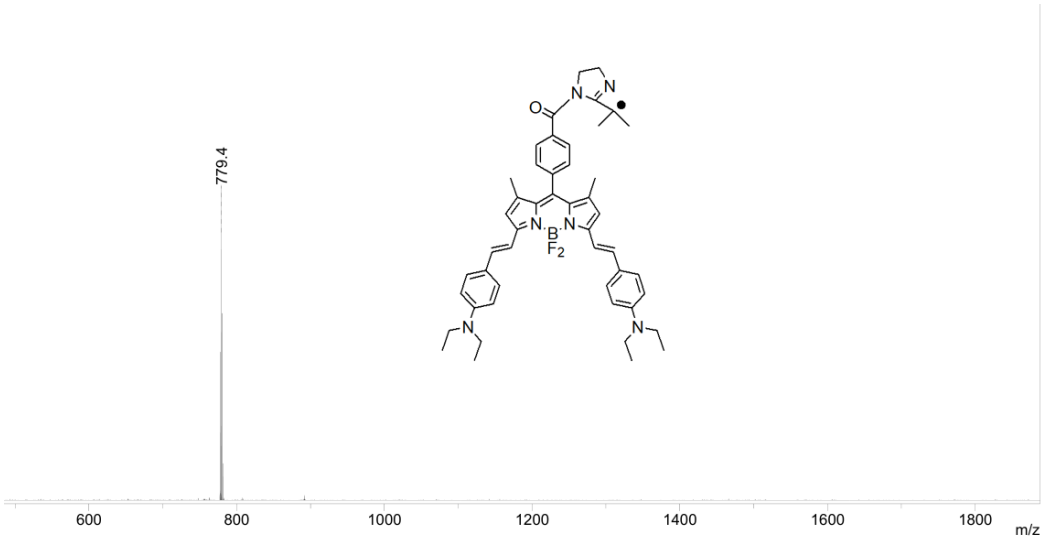

Figure S5. The MALDI-TOF of NBDP.

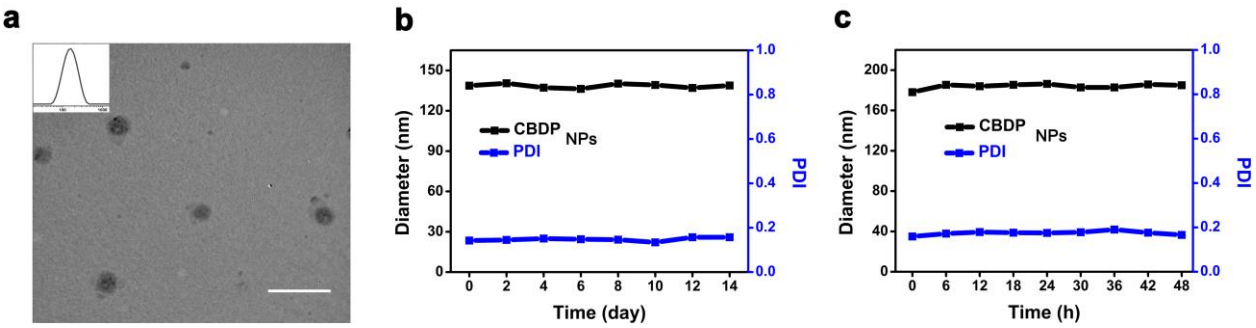

Figure S6. (a) TEM images of CBDP NPs; the stability of CBDP NPs in water b) and FBS c) over time; The inset in a): size and size distribution. Scale bar: 500 nm.

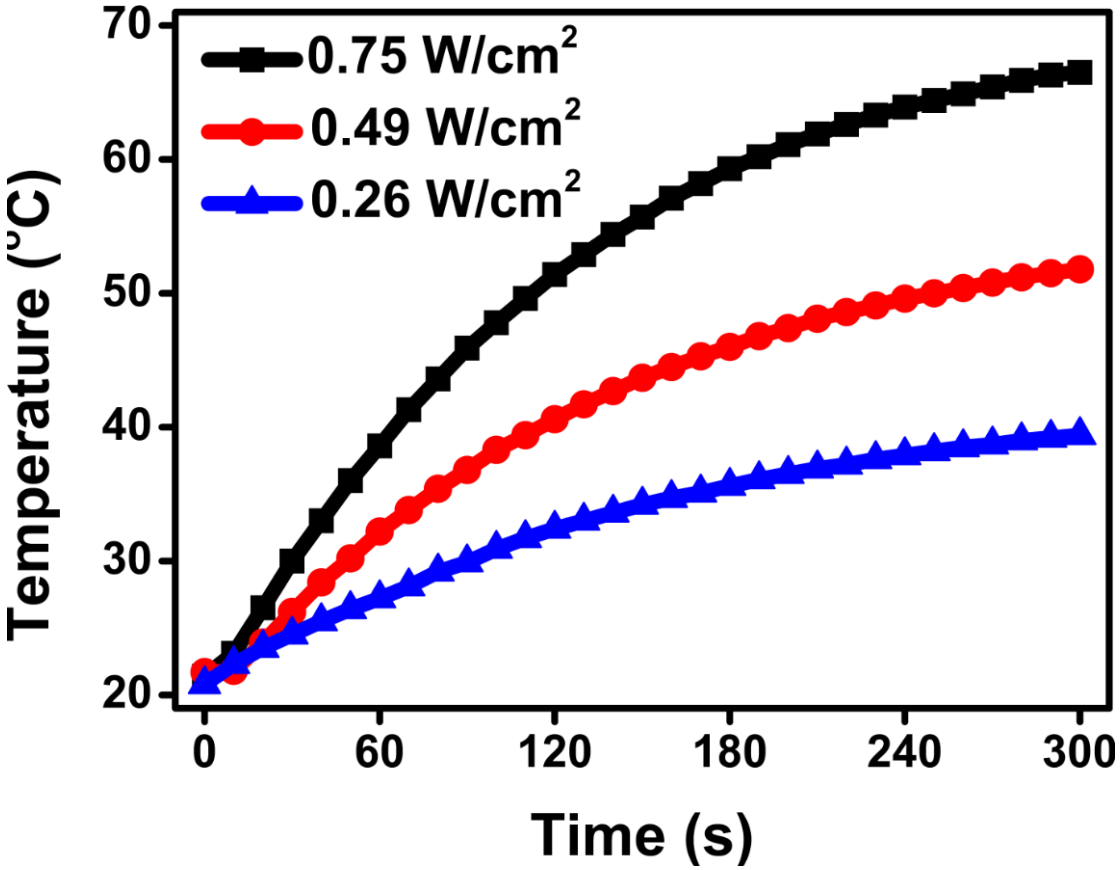

Figure S7. Photothermal heating curves of NBDP NPs with different concentrations upon 0.75 W cm^{-2} 808 nm laser irradiation.

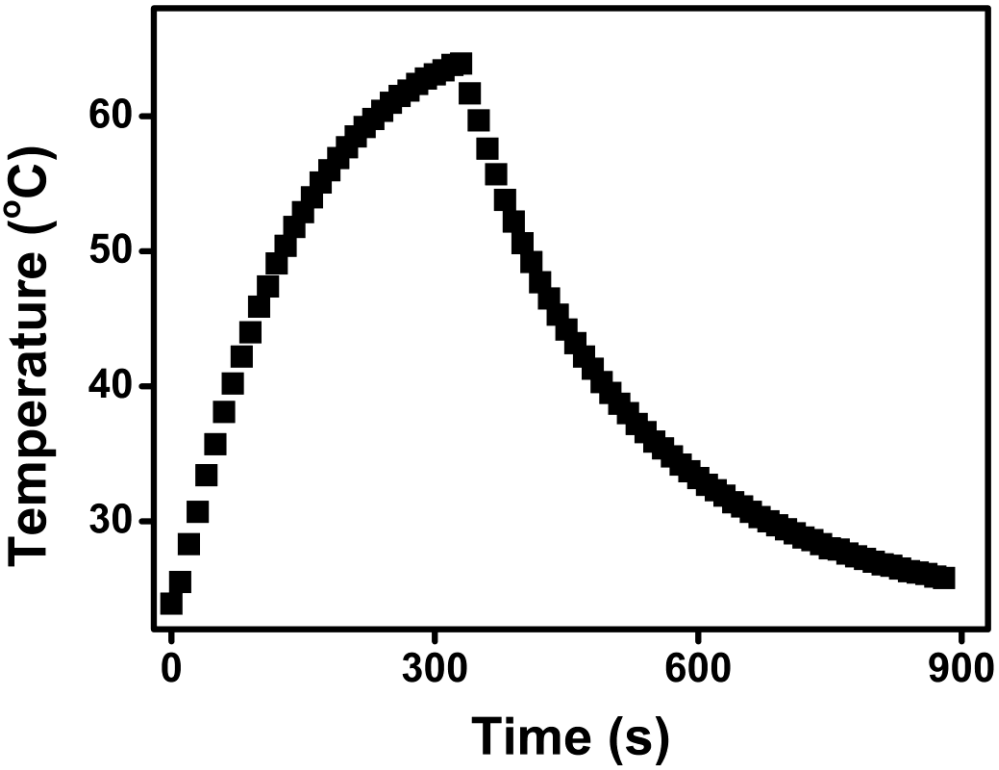

Figure S8. Photothermal effect of the NBDP NPs dispersions under irradiation of a 808 nm laser (0.75 W cm^{-2}), which was turned off after irradiation for 360 seconds;

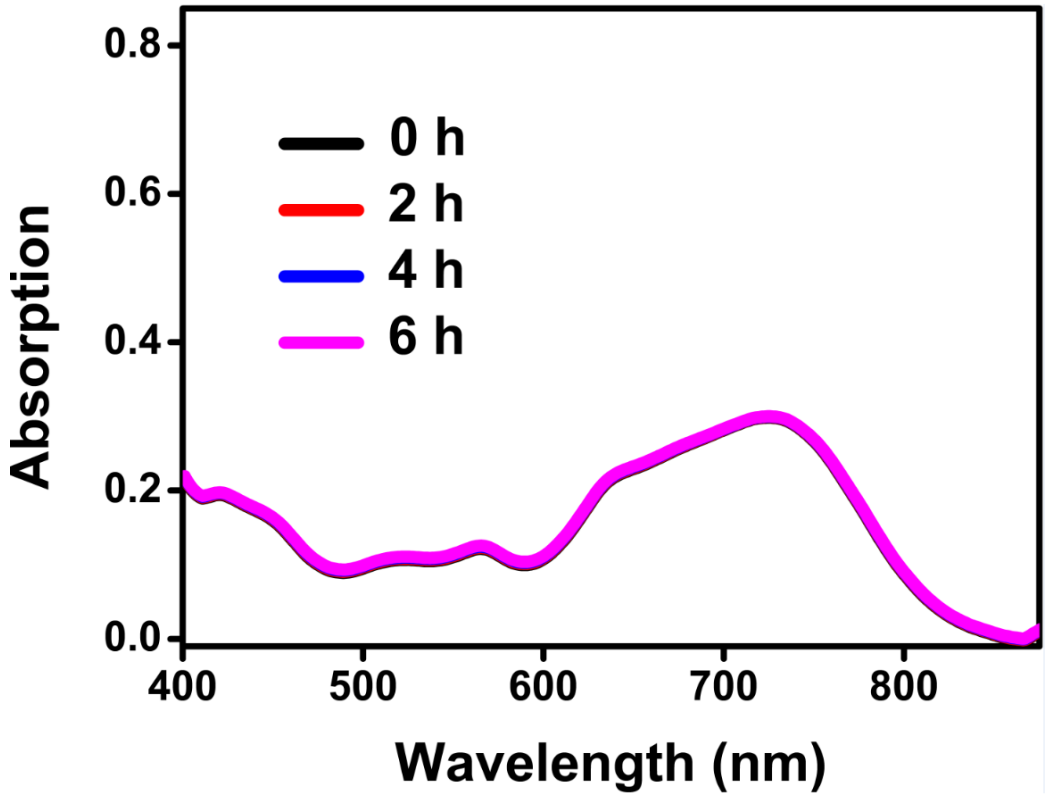

Figure S9. Generation of $ABTS^{+}$ • as induced by the free radicals released from NBDP NPs at 45°C (pH=7).

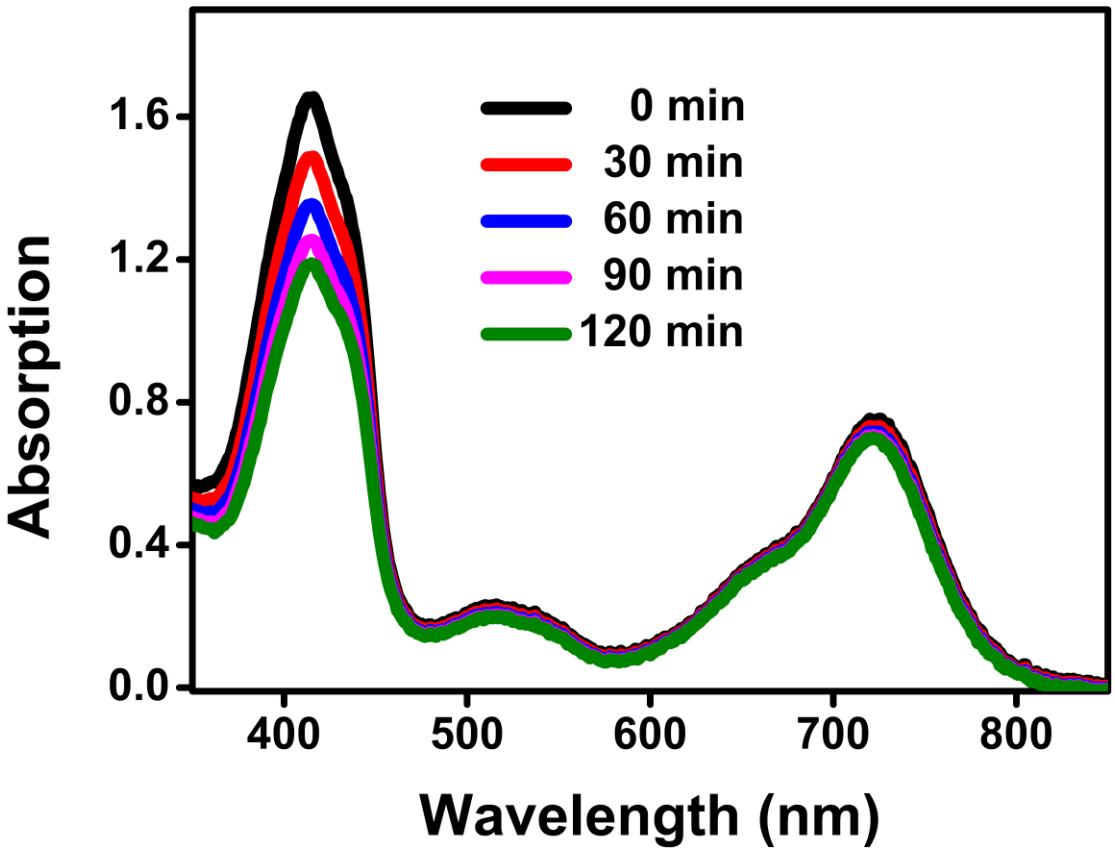

Figure 10. The change of DPBF UV-*Vis* absorption spectra in DMF (pH=7) when NBDP (10 μM) added.

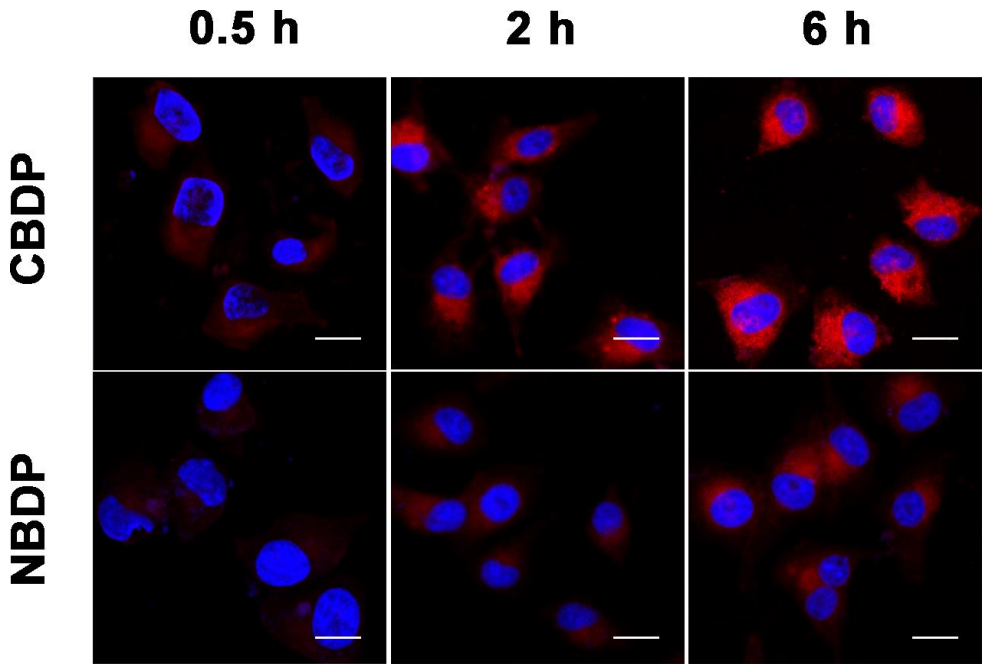

Figure S11. Confocal microscopic images of HeLa cells; after incubation with CBDP NPs and NBDP NPs (2 μM) for 0.5 h, 2 h, 6 h at the temperature 37 ºC. Scale bar: 20 μm.

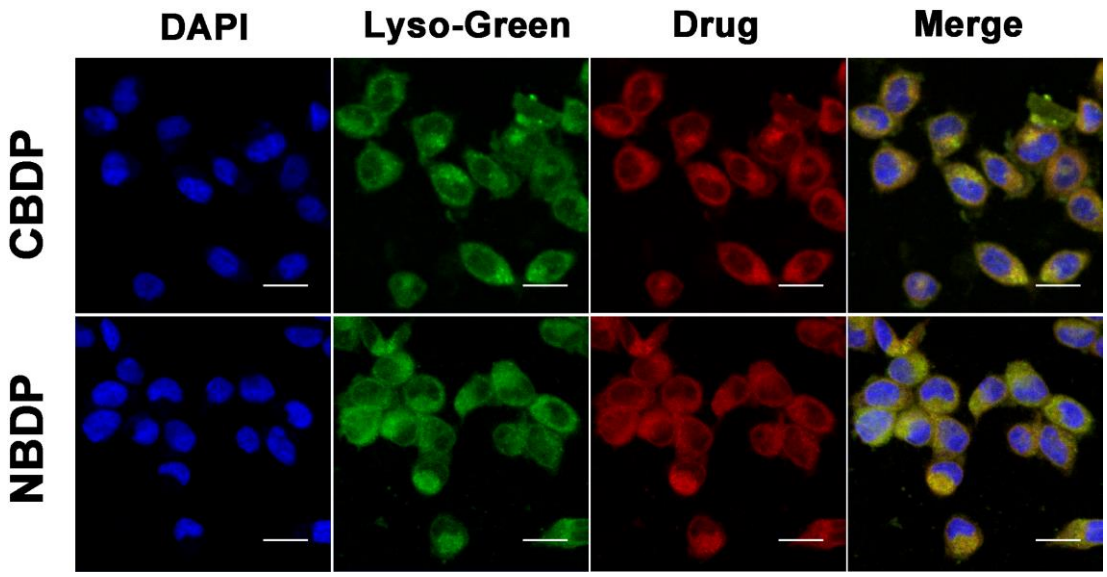

Figure S12. CLSM images of HeLa cells co-stained with CBDP NPs and NBDP NPs (2 μM) and Lyso-Tracker Green. The images showed the fluorescence of nuclei (blue), CBDP NPs and NBDP NPs (red), Lyso-Tracker Green (green) and merged images (yellow) from left to right. Scale bar: 20 μm.

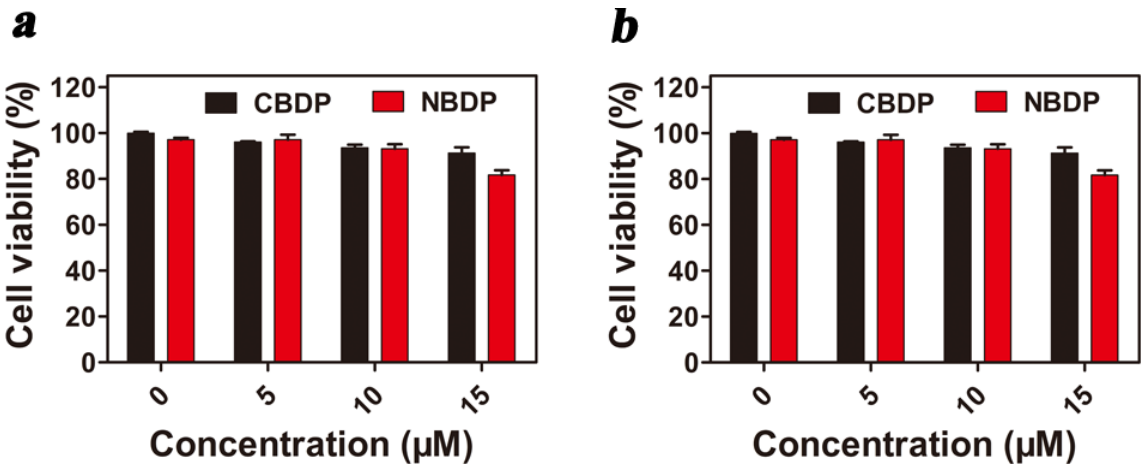

Figure S13. Cell viability of HeLa cells incubated with CBDP NPs and NBDP NPs in the dark.

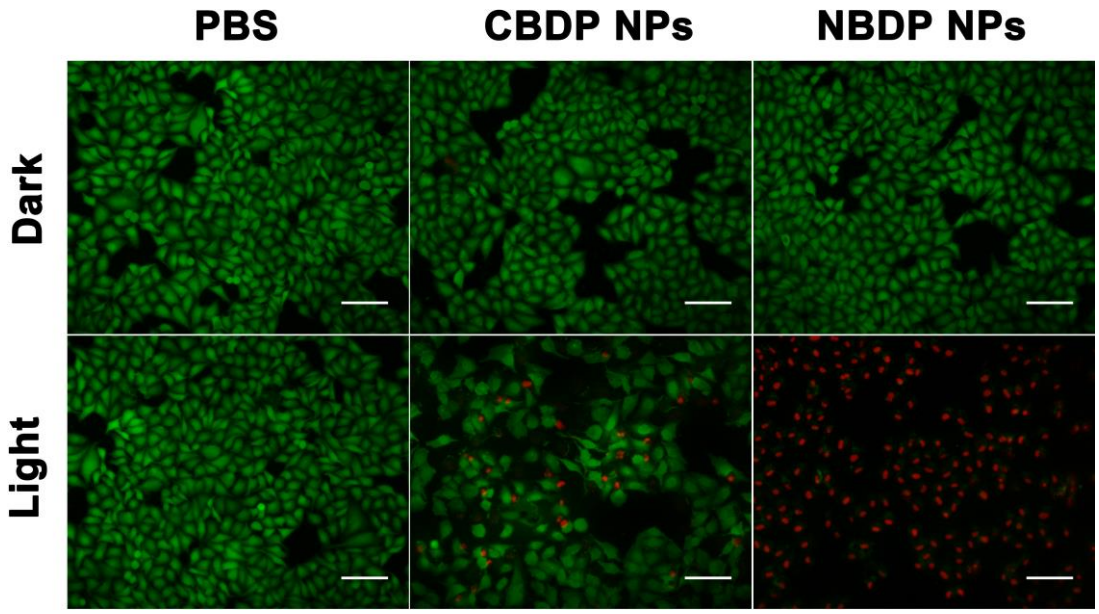

Figure S14. CLSM images of live/dead assay (Calcein-AM/PI) on co-stained HeLa cells after incubation with CBDP NPs and NBDP NPs (10 μM, 0.75 W cm^{-2}). Scale bar: 100 μm.