

Supplementary Information

Antibody Functionalized Theranostic Protein Nanoparticles for Synergistic Deep Red Fluorescence Imaging and Multimodal Therapy of Ovarian Cancer

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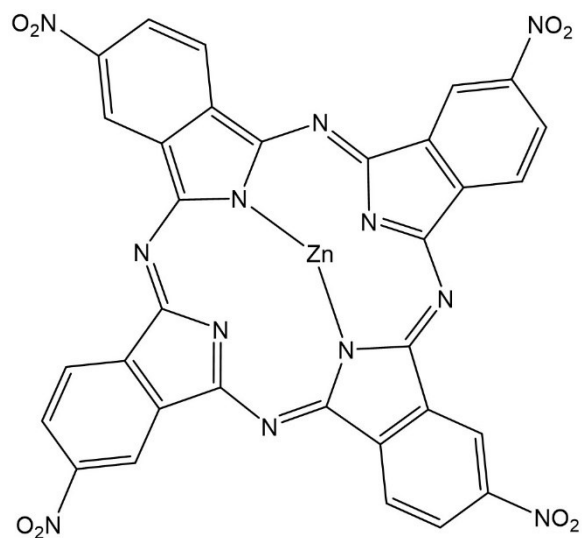


Figure S1. Chemical structure of Zn (II)-2,9,16,23-tetranitrophthalocyanine (phthalONO₂) fluorophore (empirical formula C₃₂H₁₂N₁₂O₈Zn).

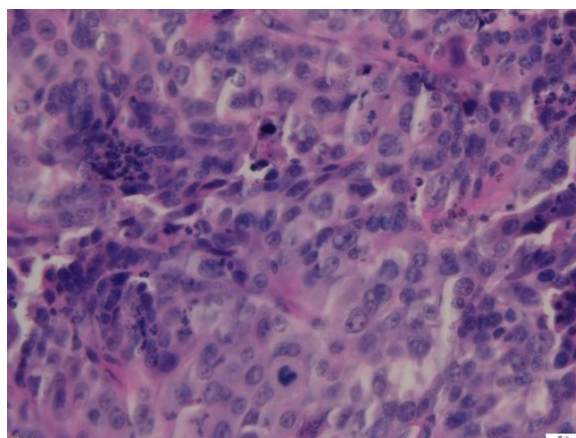


Figure S2. H&E staining of induced NIH:OVCAR3 tumor xenograft in athymic mice BALB/c (note the tumor cells with prominent nucleoli and mitotic figures).

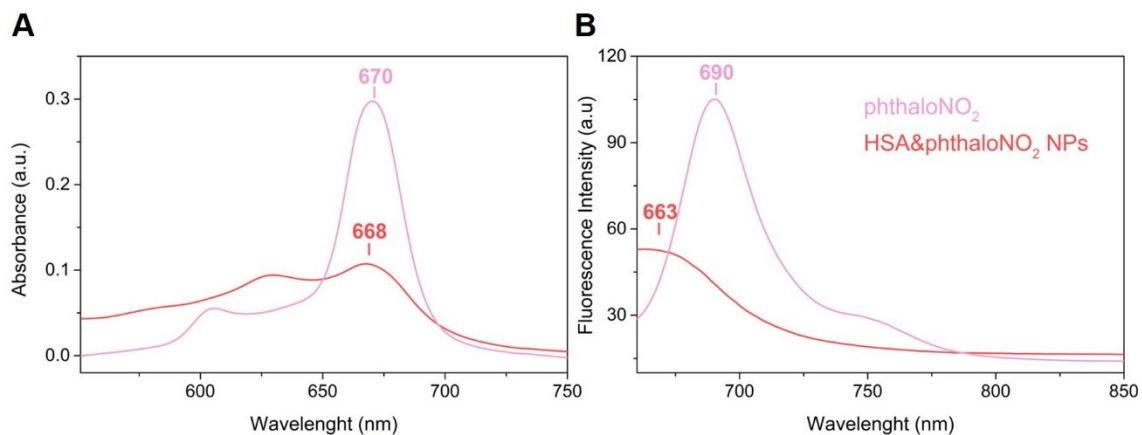


Figure S3. (A) Absorbance and (B) fluorescence emission spectra of phthalonitrile@DMSO solution (pink) and HSA&phthalonitrile NPs@PBS (orange).

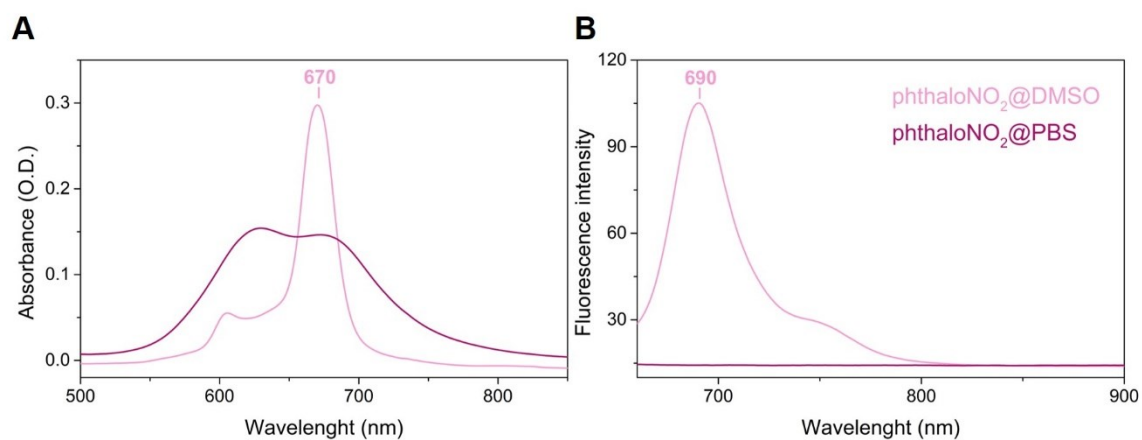


Figure S4. (A) Absorbance and (B) fluorescence emission spectra of phthalonitrile@DMSO (pink) and phthalonitrile@PBS (purple).

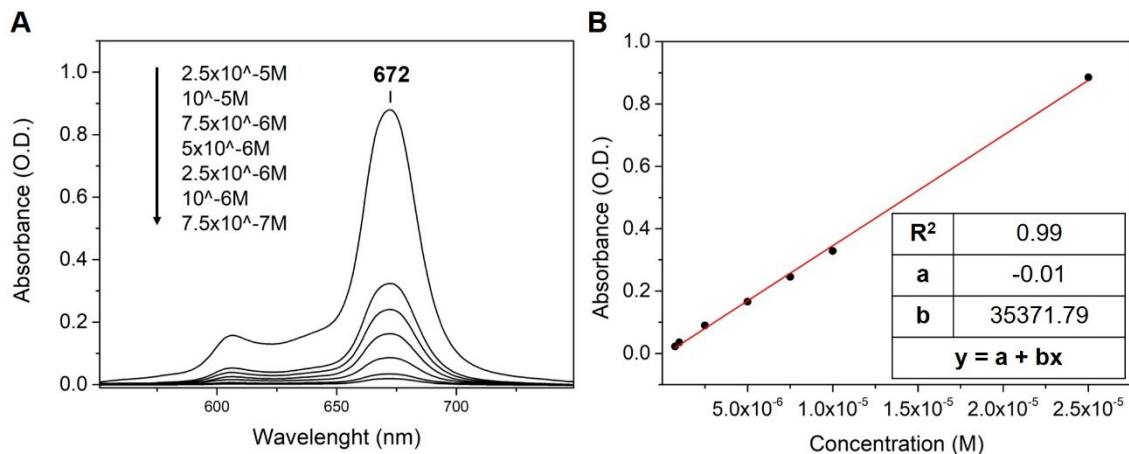


Figure S5. (A) Absorbance spectra and (B) calibration curve for various concentrations of phthaloNO₂ solution.

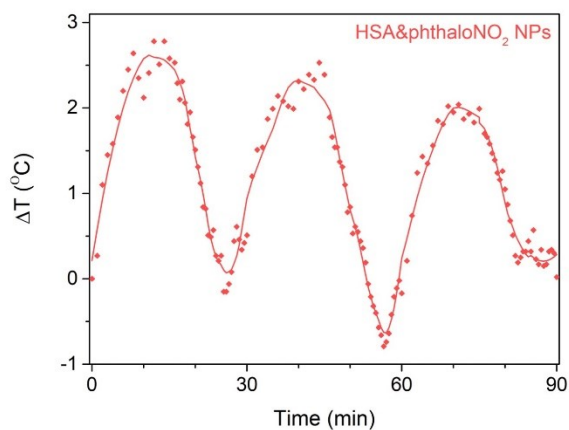


Figure S6. Thermal curves in time of HSA&phthaloNO₂ NPs during 3 heating/cooling cycles, under irradiation with a 660 nm LED lamp.

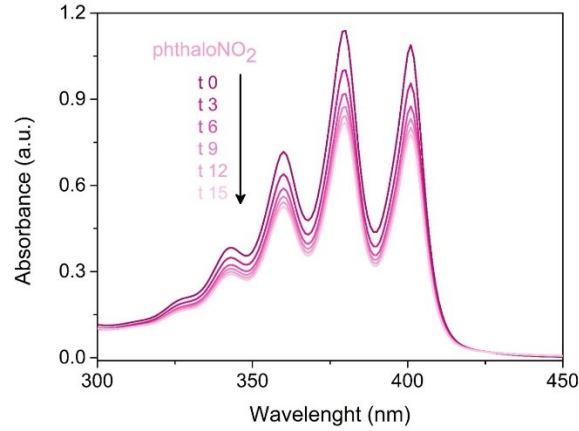


Figure S7. Absorbance spectra of ABDA molecule at different time points (0, 3, 6, 9, 12, 15 min) while under a 660 nm LED lamp exposure in the presence of phthalonitrile solution.

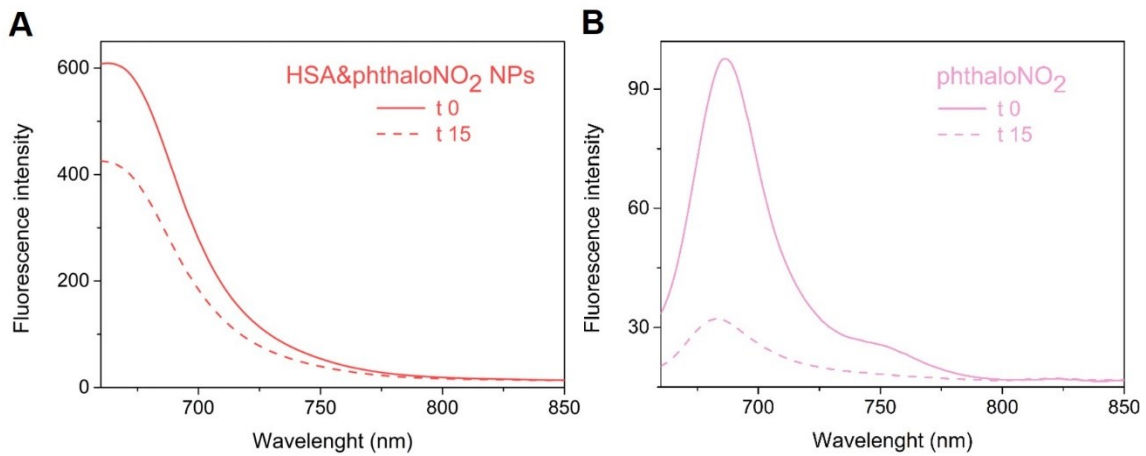


Figure S8. Fluorescence emission spectra of (A) HSA&phthalonitrile NPs and (B) phthalonitrile solution, at the initial time (solid line) and after 15 min of irradiation (dashed line) with a 660 nm LED lamp.

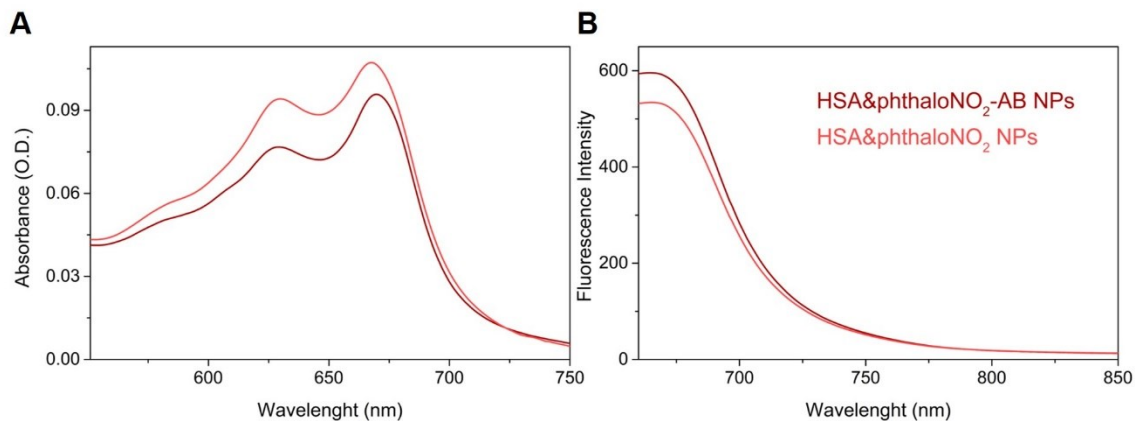


Figure S9. (A) Absorbance and (B) fluorescence emission spectra of HSA&phthaloNO₂-AB NPs (deep orange) and HSA&phthaloNO₂ NPs (orange).

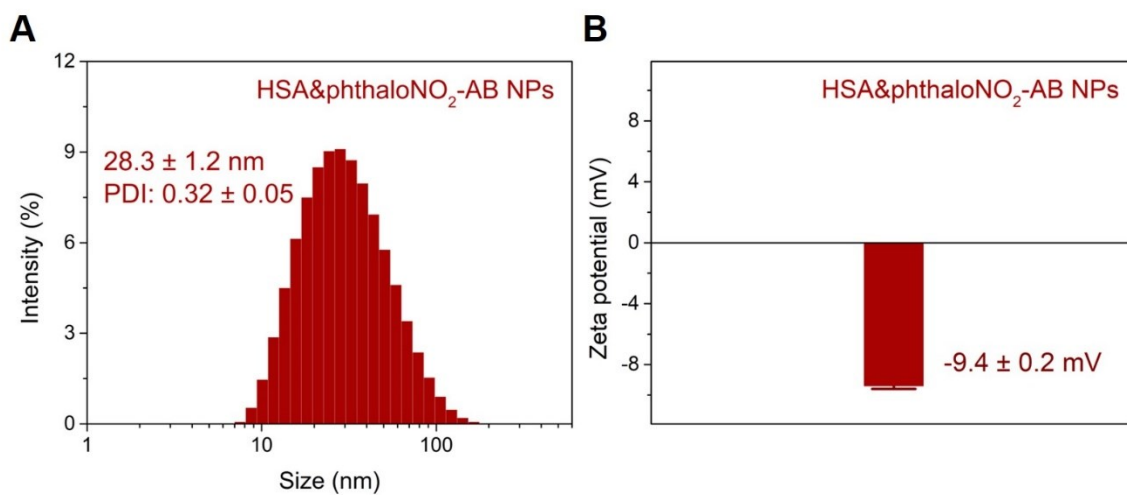


Figure S10. (A) DLS and (B) zeta-potential measurements of HSA&phthaloNO₂-AB NPs.

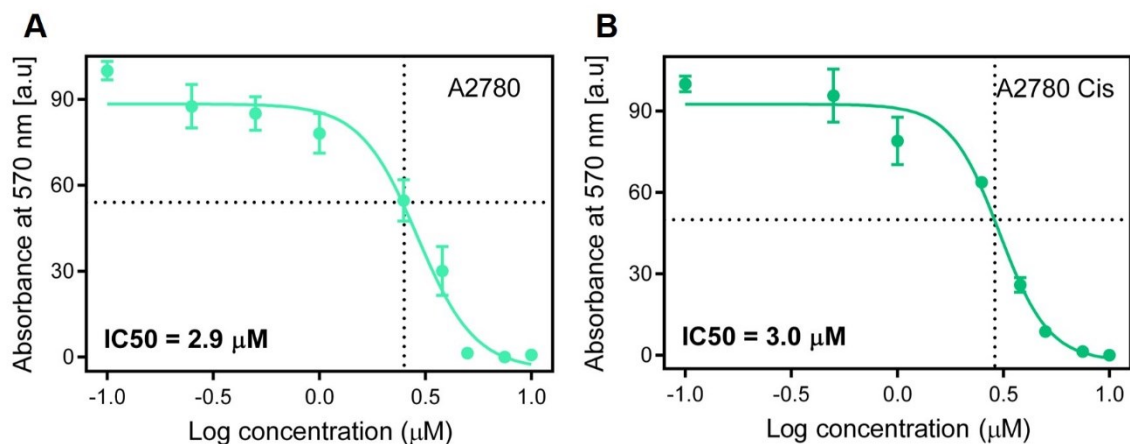


Figure S11. MTT assays performed on (A) A2780 and (B) control A2780 Cis cell lines for free phthaloNO₂ solutions.

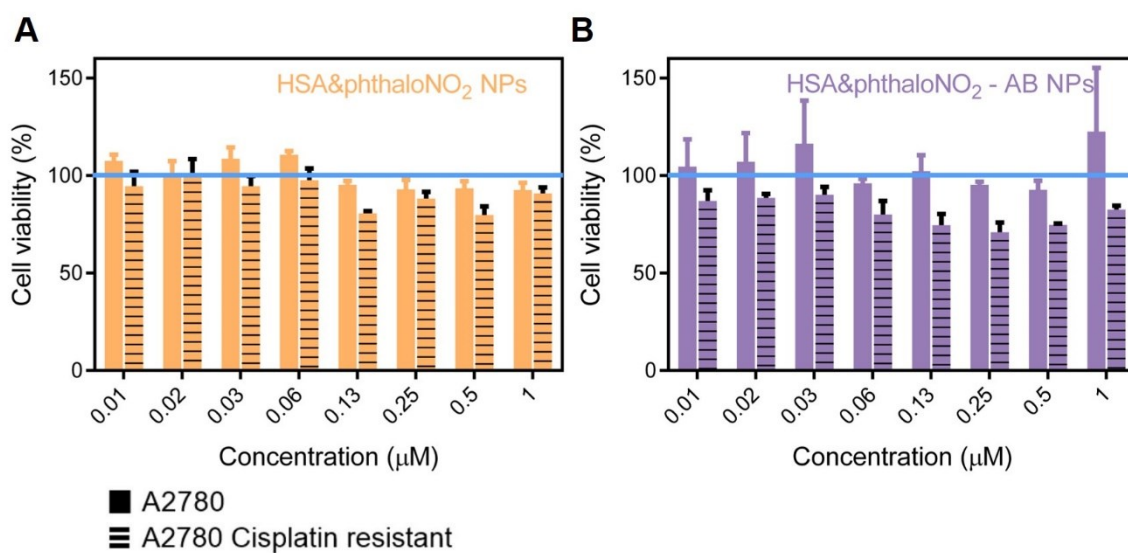


Figure S12. MTT assays performed on A2780 (solid colour) and A2780 Cis (lined colour) cell lines for (A) HSA&phthaloNO₂ NPs and (B) HSA&phthaloNO₂-AB NPs; control group represented by the blue horizontal line (100% viability).

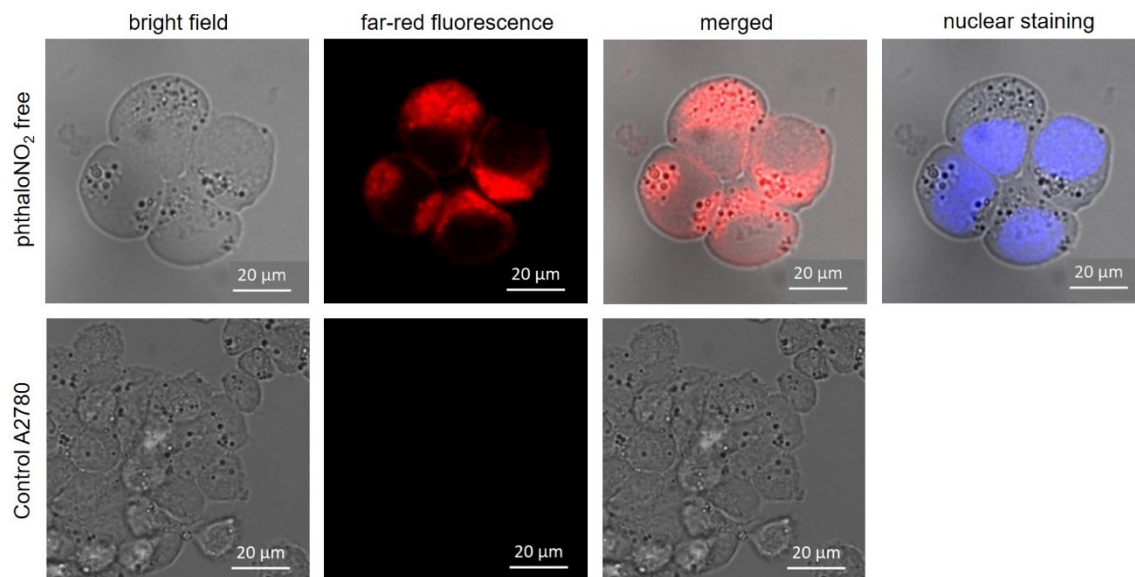


Figure S13. Fluorescence images of A2780 cells treated for 24h with phthaloNO₂ solution (top) and a control group without any treatment (bottom). The cells were stained with DAPI.

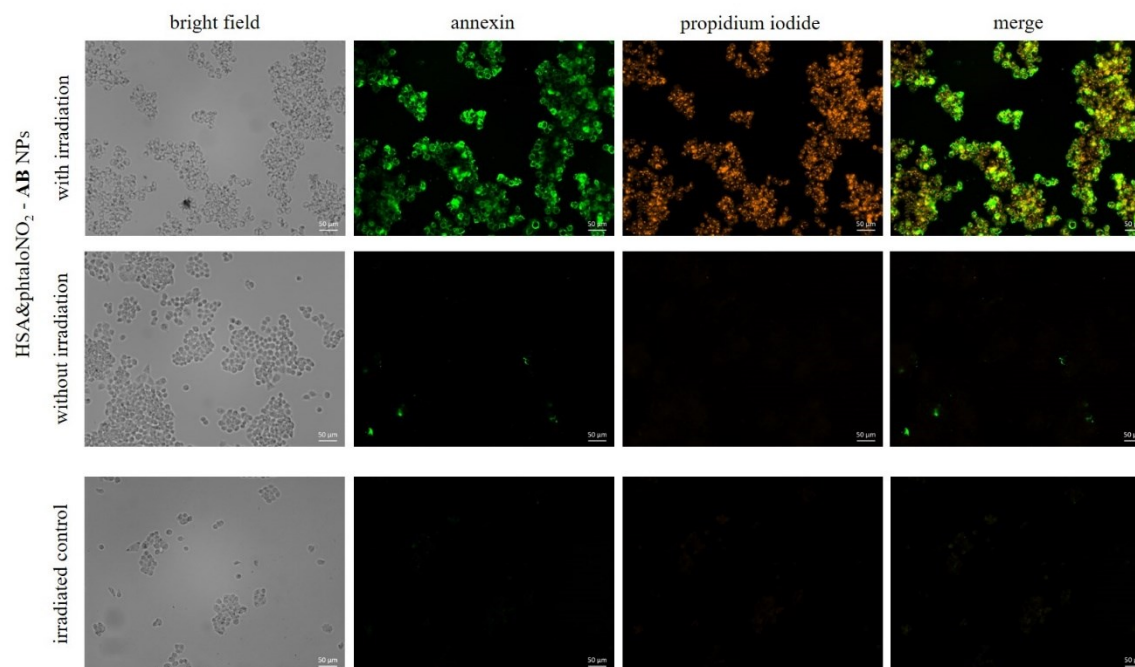


Figure S14. Multimodal therapy studied on A2780 cells treated with HSA&phthaloNO₂-AB NPs and an irradiated control group (20x objective magnification). The cells were stained with Annexin V (green) and propidium iodide (orange).