Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Biotin-Conjugated PEGylated Porphyrin Self-assembled Nanoparticle Co-targeting Mitochondria and Lysosome for Advanced Chemo-Photodynamic Combination Therapy

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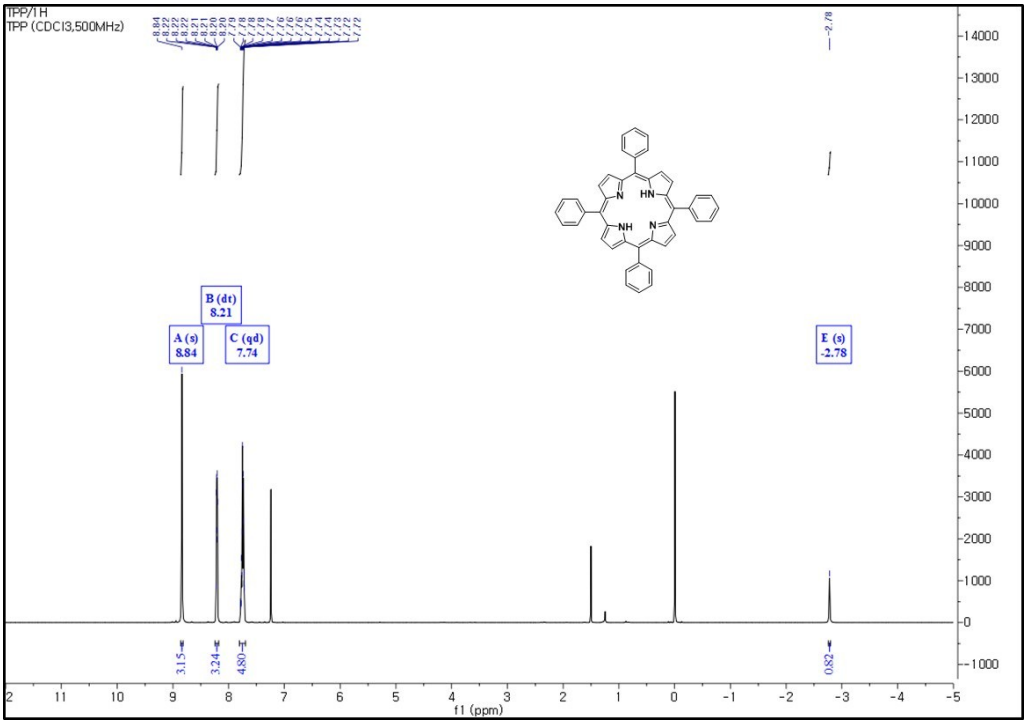
Experimental section

Cytotoxicity assay of doxorubicin

Approximately 1.0×10^4 MCF-7 cells were seeded onto a 96-well plate and incubated at 37 °C in 5% CO_2 condition overnight. The cells were treated with different concentrations DOX (0 to 3.6 μM) and incubated for 48 hours. The media containing DOX was replaced with 100 μl of 0.5 mg/ml MTT solution (Thiazolyl Blue Tetrazolium Bromide; Sigma-Aldrich, USA) and incubated at 37 °C in 5% CO_2 atmosphere under a dark condition for 3 h. After removal of MTT solution, DMSO (Sigma-Aldrich, USA) was added to each well to dissolve insoluble formazan crystals formed by reduction of MTT. The absorbance of formazan/DMSO solution at 560 nm was measured by a multiplate reader (Gemini XS, Molecular devices, USA).

Figure S1

^{1}H NMR spectrum of TPP



^{13}C NMR spectrum of TPP

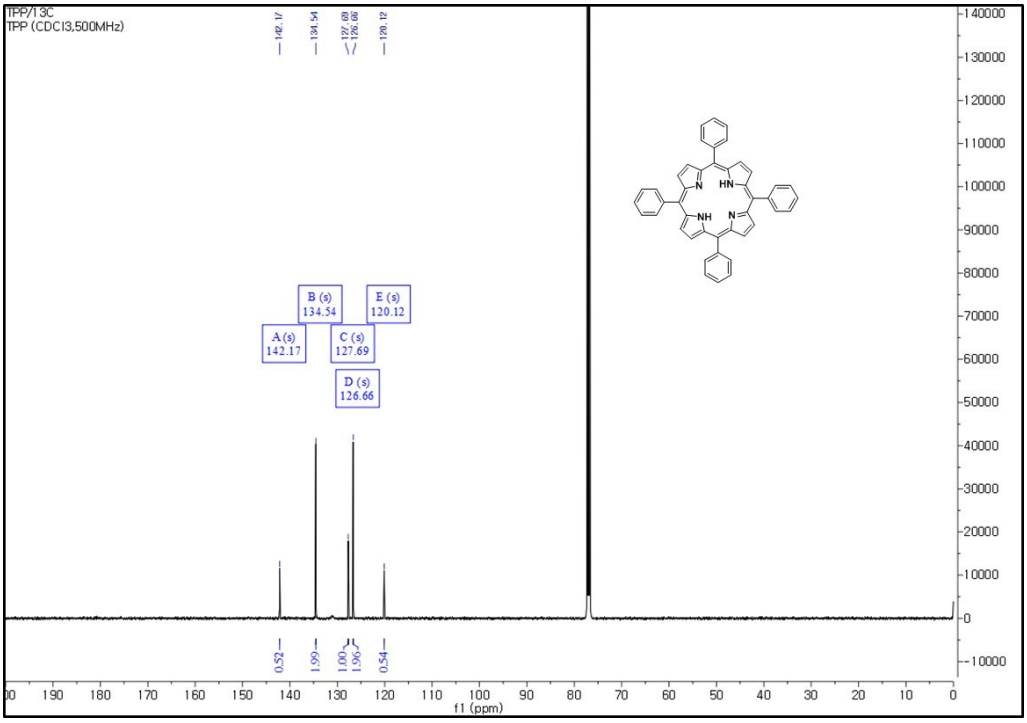


Figure S2

MALDI-TOF spectrum of TPP

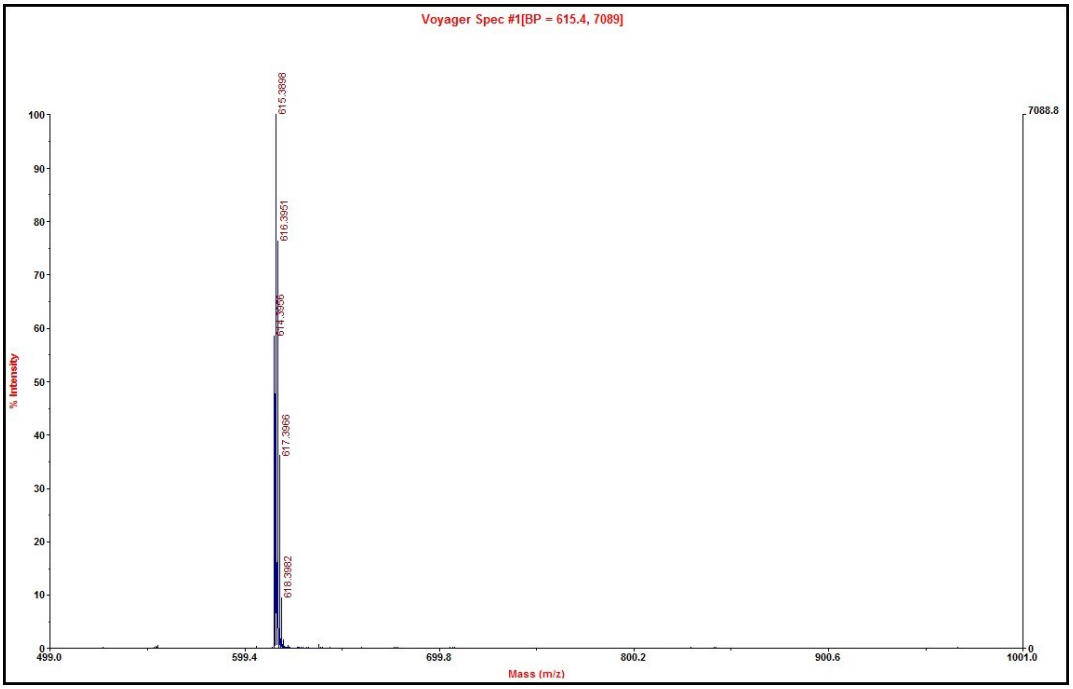


Figure S3

^{1}H NMR spectrum of TPP-NO_2

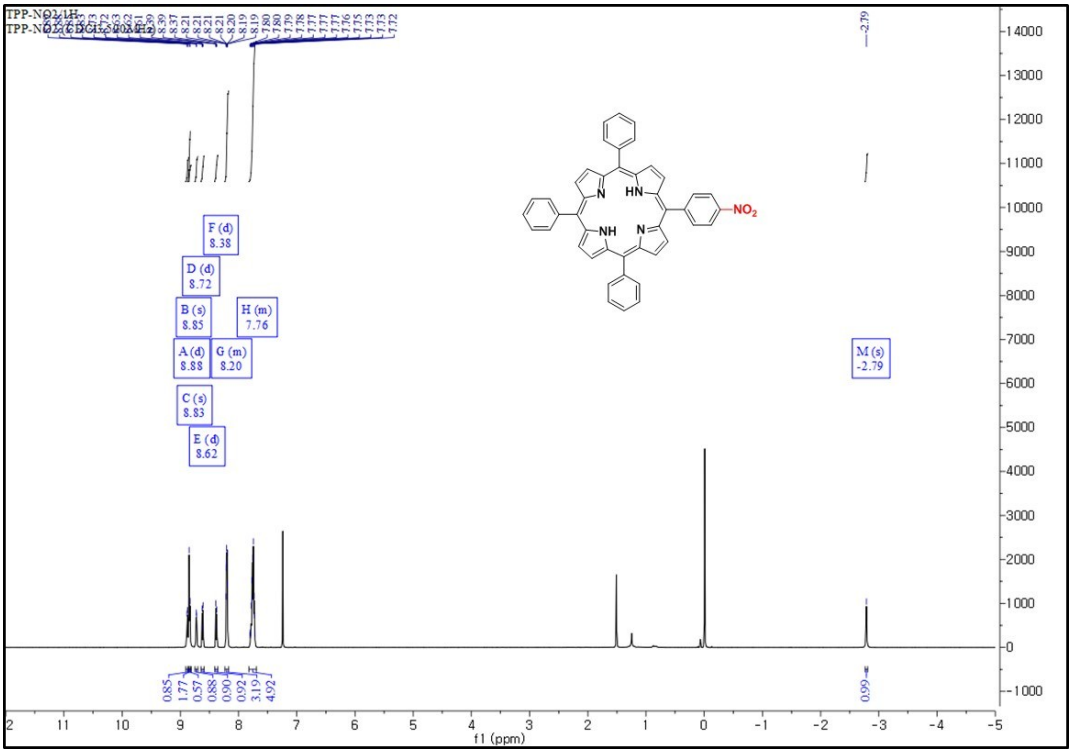


Figure S4

^{13}C NMR spectrum of TPP-NO_2

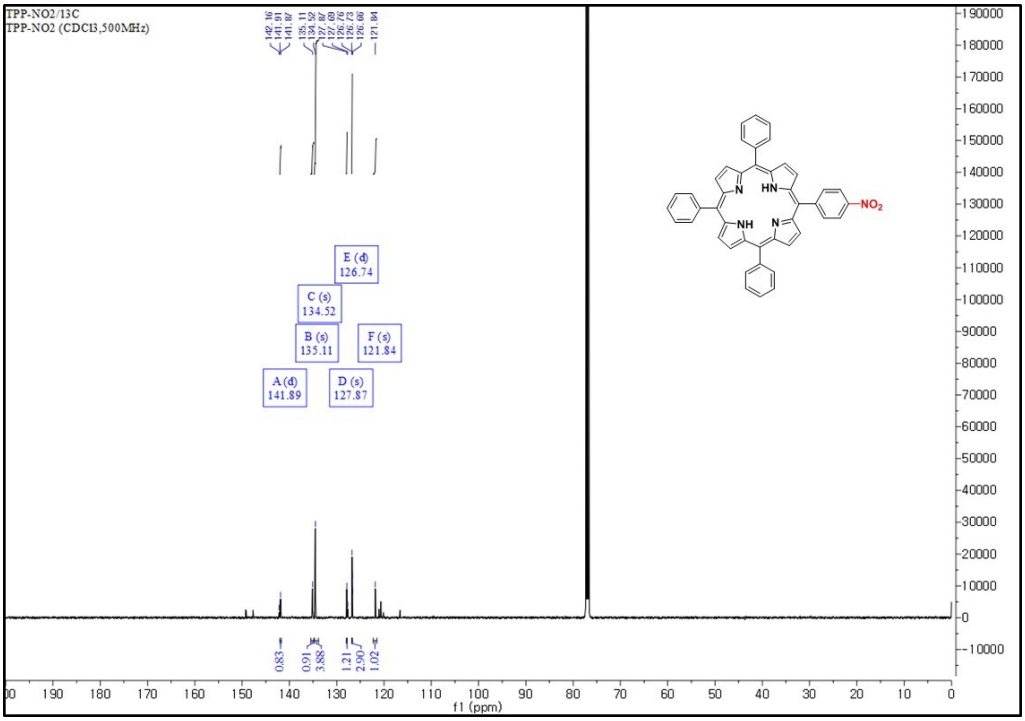


Figure S5

MALDI-TOF spectrum of TPP-NO_2

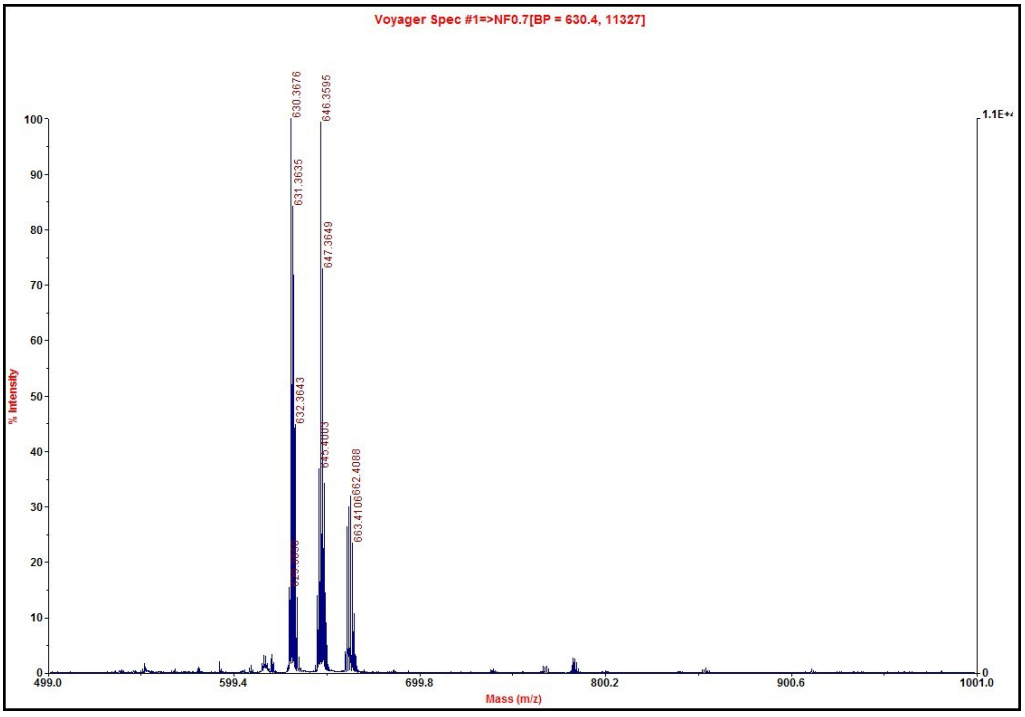
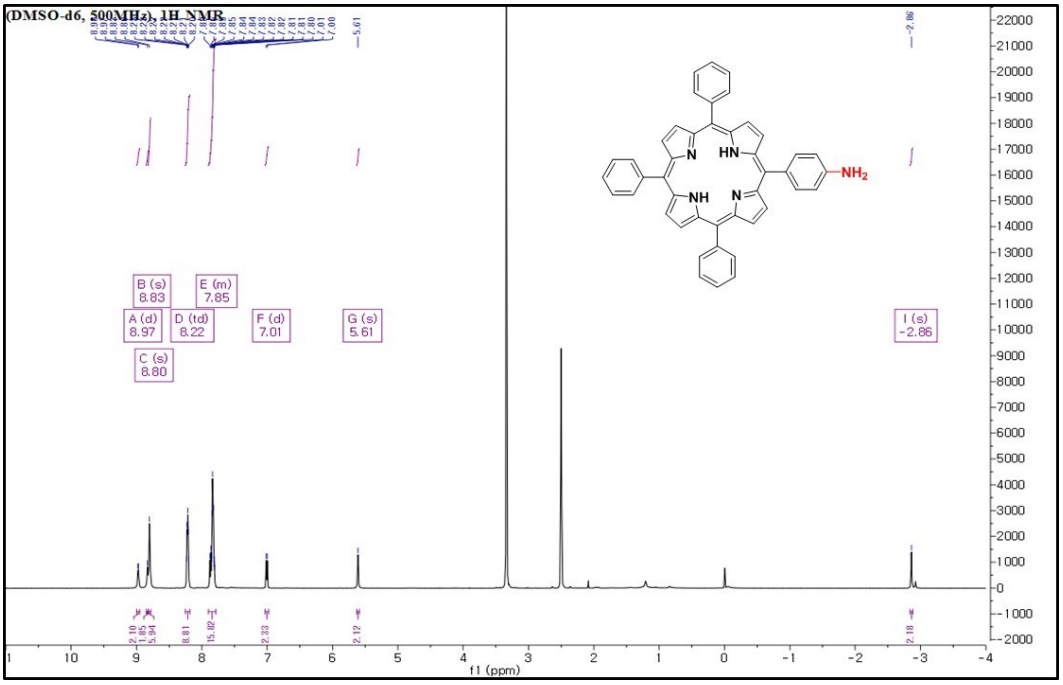


Figure S6

^{1}H NMR spectrum of TPP-NH_2



^{13}C NMR spectrum of TPP-NH_2

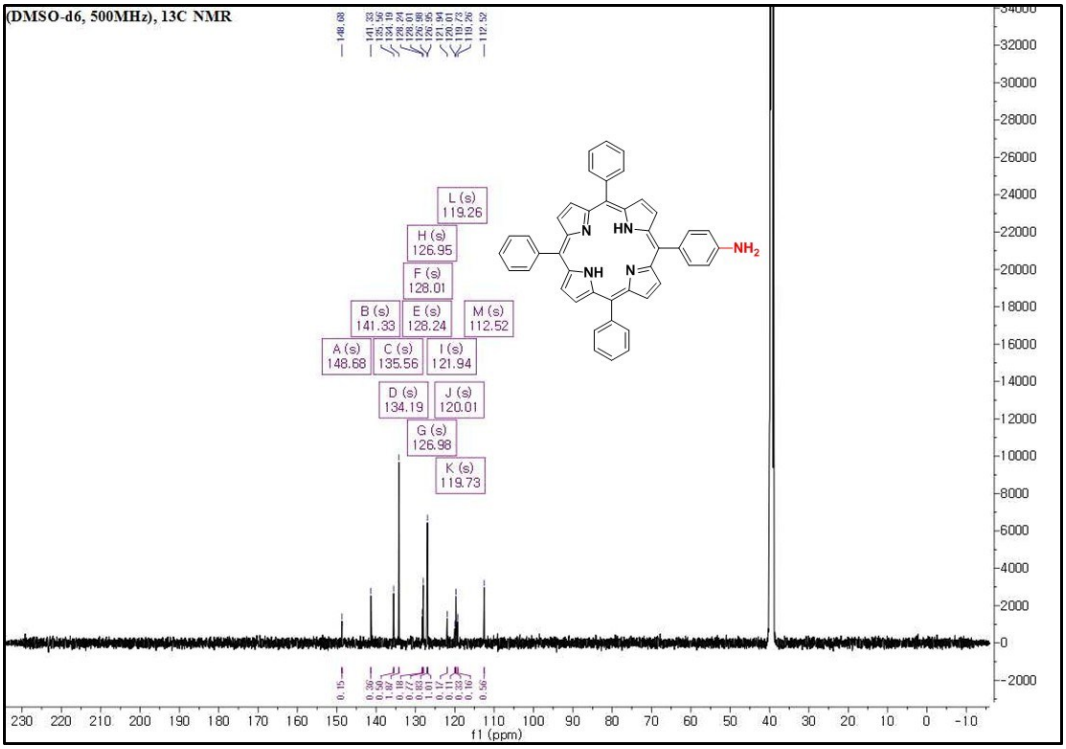


Figure S7

MALDI-TOF spectrum of TPP-NH_2

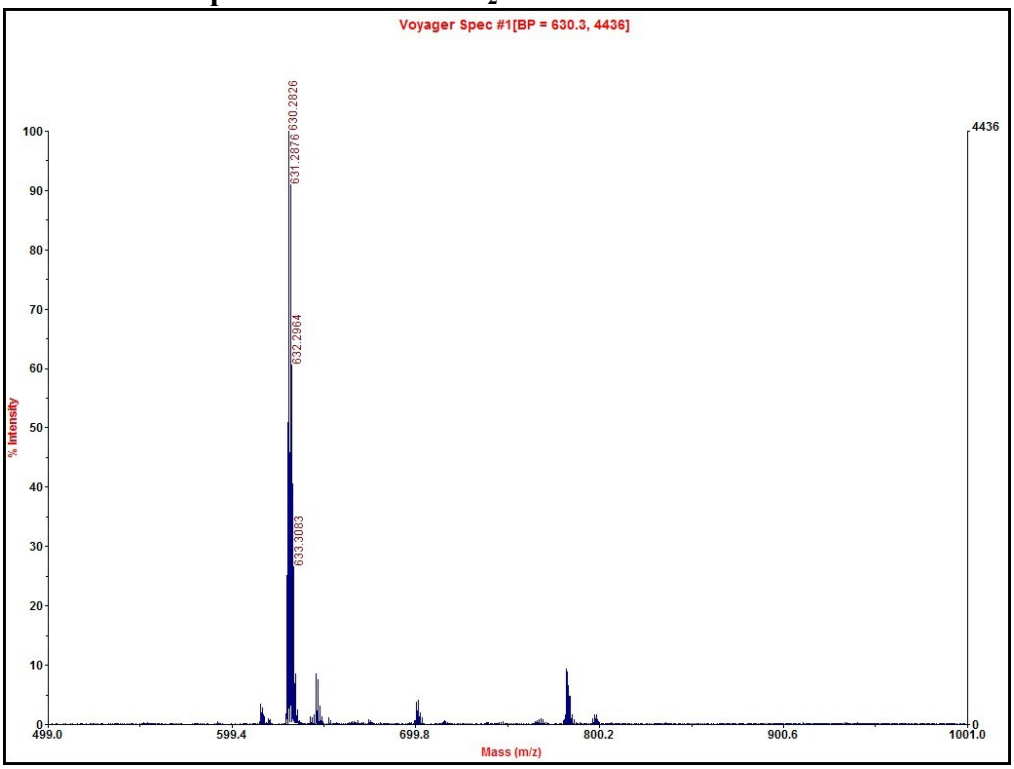


Figure S8

^{1}H NMR spectrum of TPP-PEG-Biotin

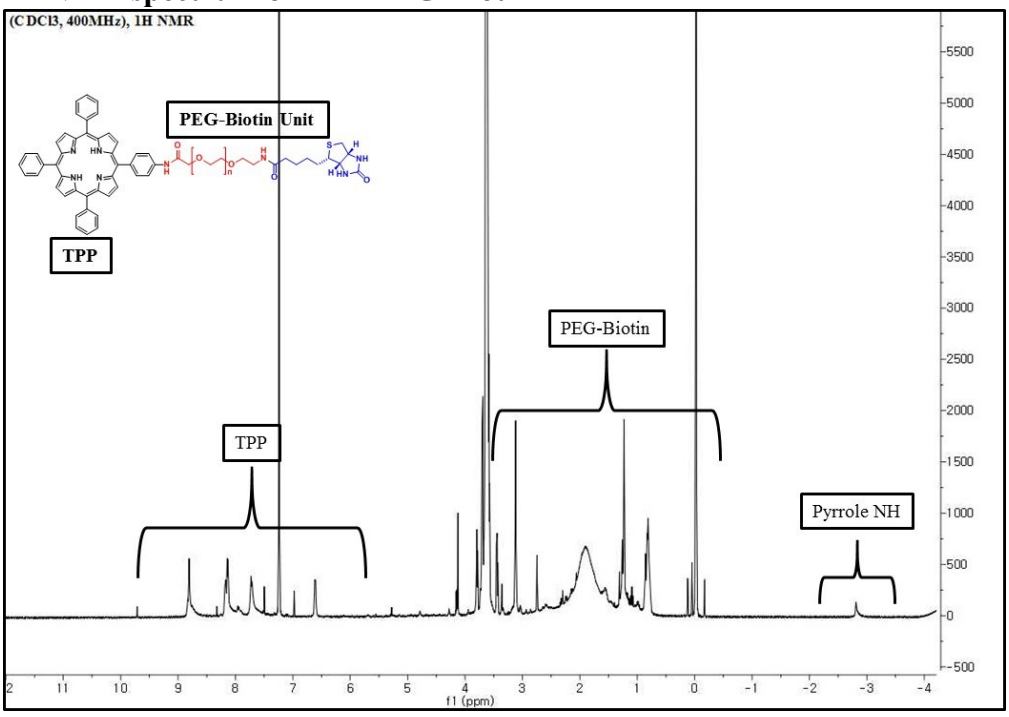


Figure S9

MALDI-TOF spectrum of TPP-PEG-Biotin

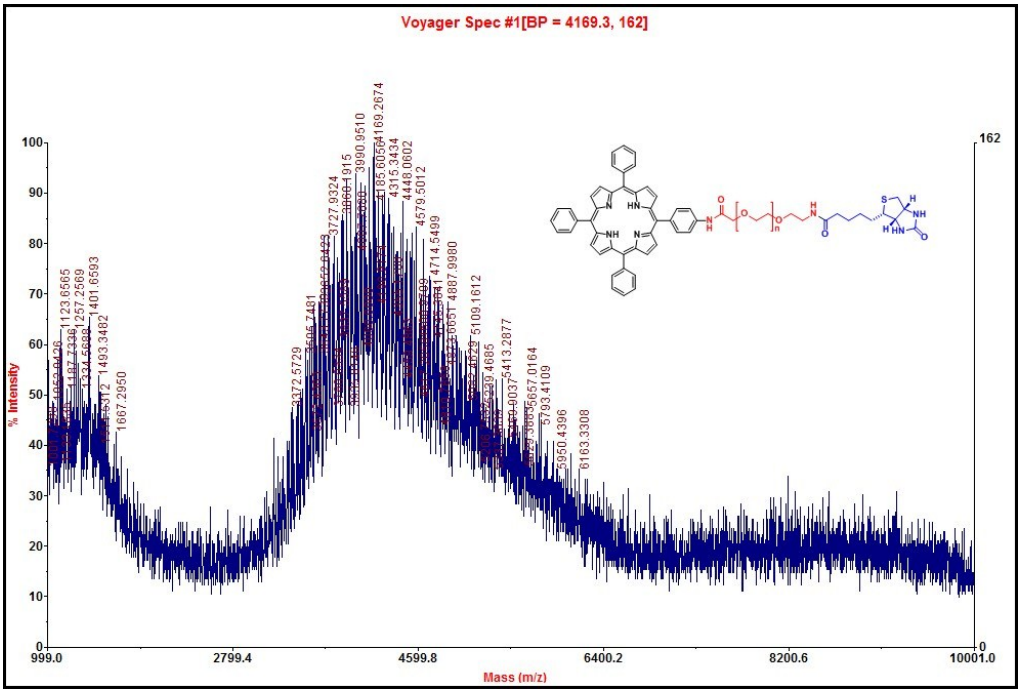


Figure S10

UV-Vis Absorption spectrum of TPP-PEG-Biotin

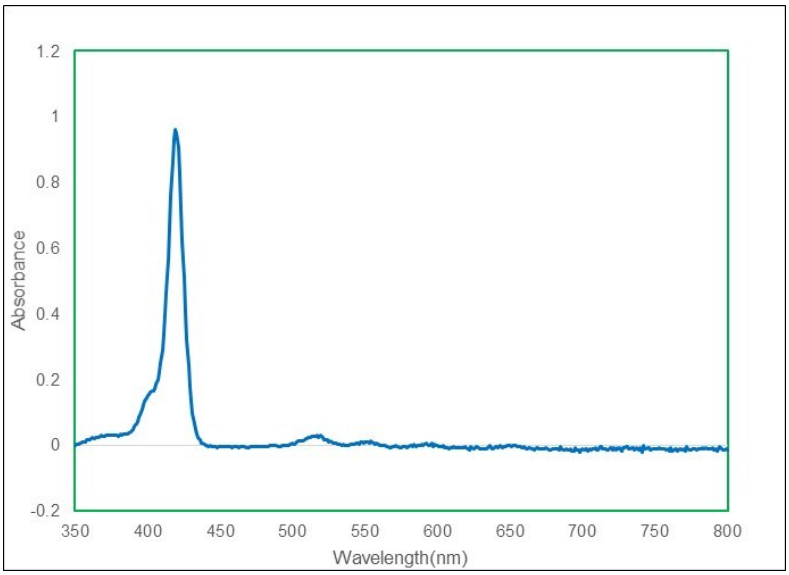


Figure S11. ^{1}H NMR spectrum of TPP-PEG-Biotin SANs

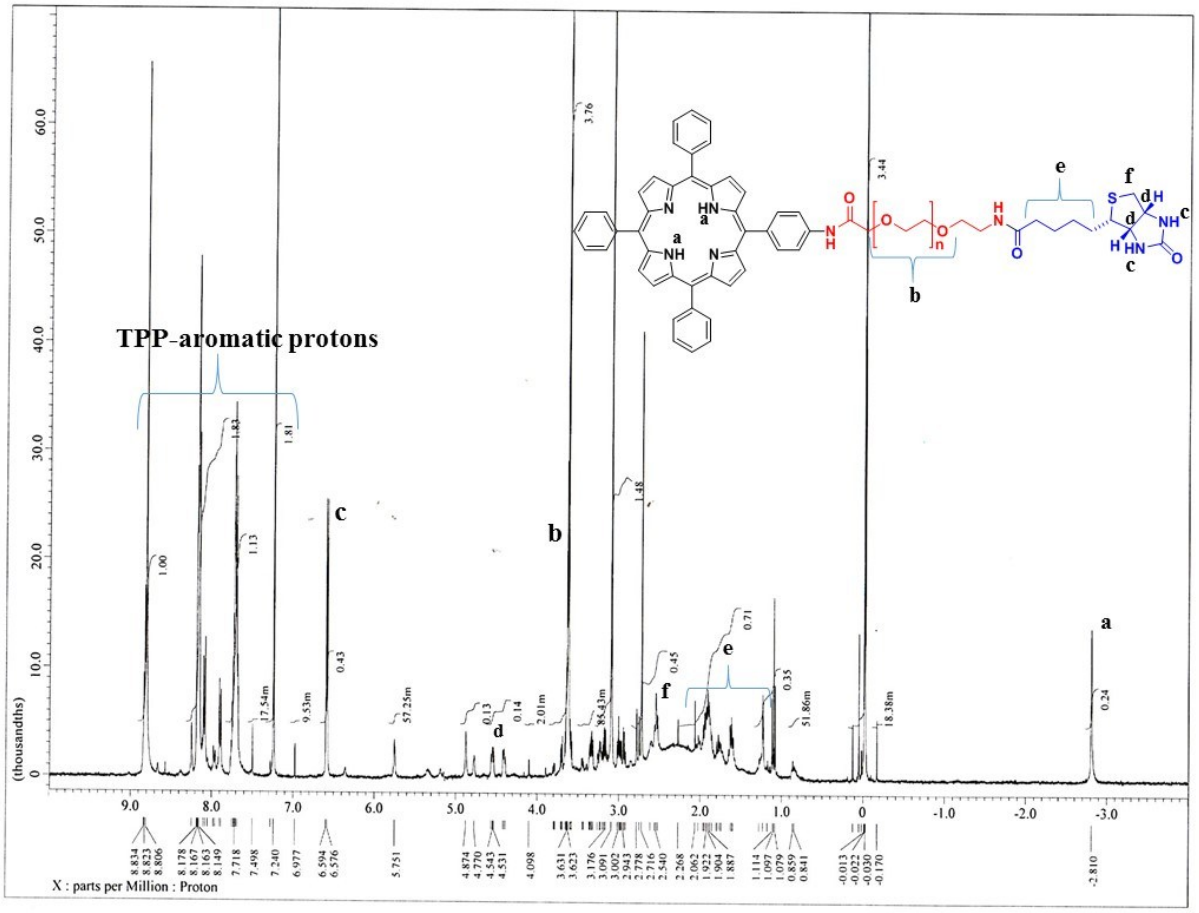


Figure S12. SEM image for the TPP-PEG-Biotin SANs

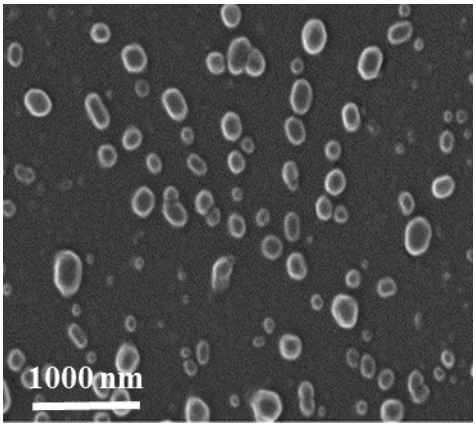


Figure S13. Subcellular localization. The fluorescence images obtained by confocal microscope represent subcellular distribution of TPPS, TPP-PEG-Biotin, and TPP-PEG-Biotin SAN in MCF-7. A set of images contains Hoechst, ER-Tracker, Photosensitizer, and Overlay image. Excitation and emission wavelength (nm) of organelle-specific probes; Hoechst 350/461 (λex/λem), ER-Tracker 504/511. Scale Bar, 10 μm.