

Breaking the Redox Homeostasis Strategy for Tumor Therapy Based on PDT/Chemo/Ferroptosis Therapeutic Hybrid Liposomes

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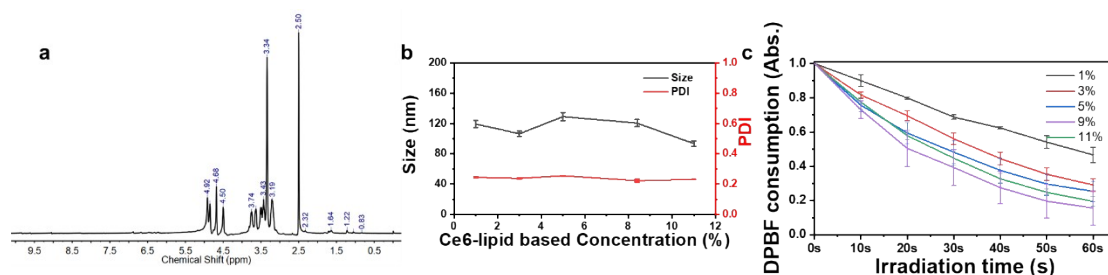


Figure.S1. a) ¹H NMR of Lyso-PC-Ce6 molecule. b) DLS size of various Lipo-Ce6 liposomes and c) corresponding singlet oxygen production determined by DPBF consumption.

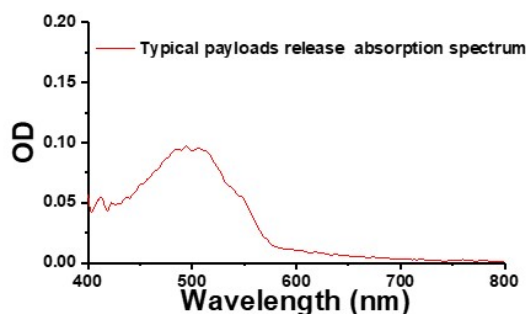


Figure. S2. Typical payloads release absorption spectrum.

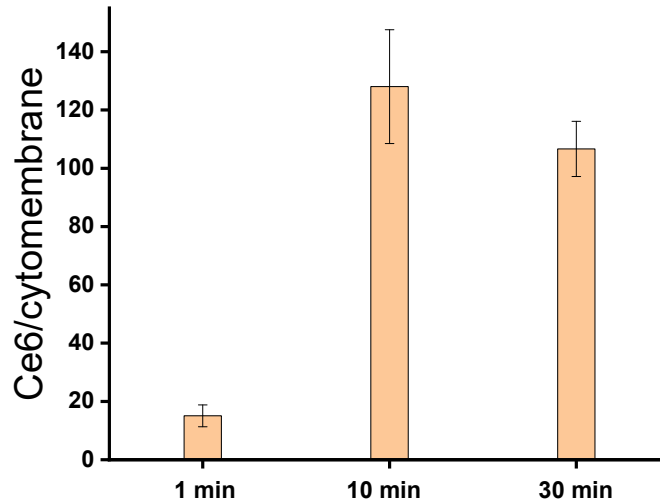


Figure. S3. Relative intensity of fluorescence of Ce6 to cytomembrane stained by DiO.

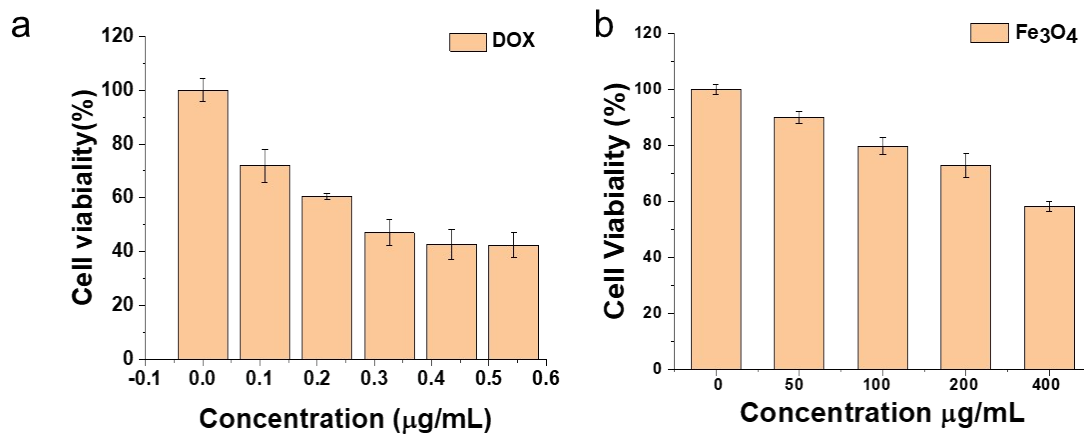


Figure. S4. Cell viability of A549 cells after treatment with (a) free DOX and (b) Fe₃O₄ nanoparticles at various concentrations for 24 h.

Table 1.

Description	Gene numbers
Folate biosynthesis	5
Phenylalanine metabolism	5
cGMP-PKG signaling pathway	12
Morphine addiction	7
cAMP signaling pathway	10
Viral carcinogenesis	10
Small cell lung cancer	6
One carbon pool by folate	3
Glycine, serine and threonine metabolism	4
Fatty acid degradation	4
Biosynthesis of amino acids	5
O-glycan biosynthesis, mucin type core	3

Neuroactive ligand-receptor interaction	11
Rap1 signaling pathway	9
Sphingolipid signaling pathway	6
Protein digestion and absorption	5
Alanine, aspartate and glutamate metabolism	3
Signaling pathways regulating pluripotency of stem cells	6
Insulin resistance	5
Hedgehog signaling pathway	3
Description	Gene numbers
Protein processing in endoplasmic reticulum	19
TNF signaling pathway	14
Ferroptosis	9
Glycine, serine and threonine metabolism	9
Cysteine biosynthesis, homocysteine + serine => cysteine	3
Cytokine-cytokine receptor interaction	19
Apoptosis	12
Amino sugar and nucleotide sugar metabolism	7
NOD-like receptor signaling pathway	13
NF-kappa B signaling pathway	9
Salmonella infection	8
Transcriptional misregulation in cancer	12
p53 signaling pathway	7
Vibrio cholerae infection	6
PI3K-Akt signaling pathway	18
IL-17 signaling pathway	8
Pathogenic Escherichia coli infection	6
Fluid shear stress and atherosclerosis	10
Bladder cancer	5
Epstein-Barr virus infection	12

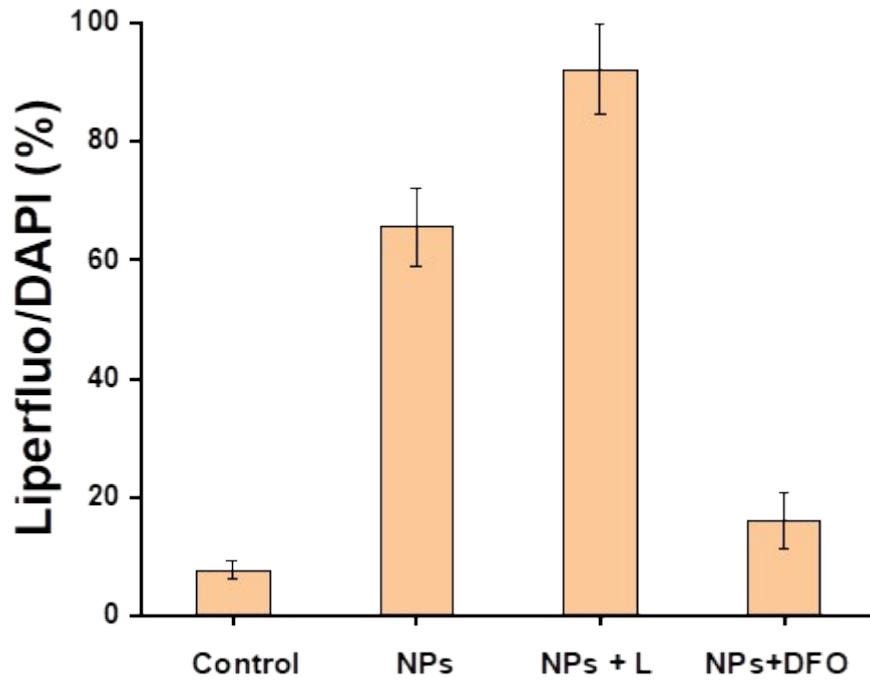


Figure. S5. Relative intensity of fluorescence of liperfluo to DAPI.

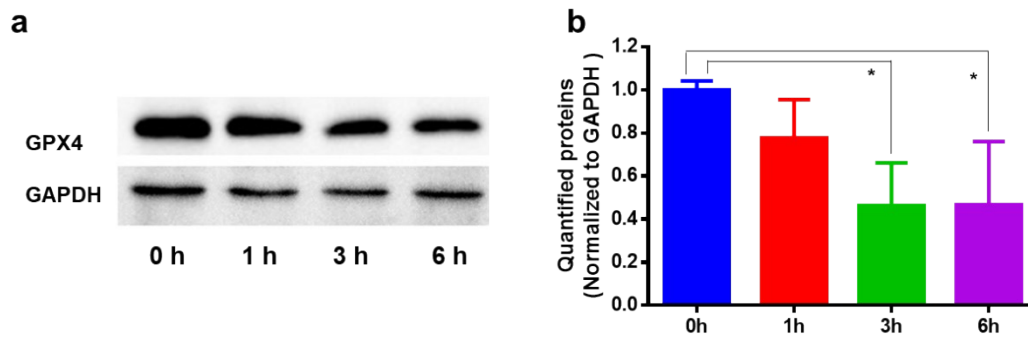


Figure S6. a) Western blot analysis and relative expression of GPX4 after treatment with 200 $\mu\text{g}/\text{mL}$ of Fe_3O_4 and b) corresponding quantified proteins. $n=3$.

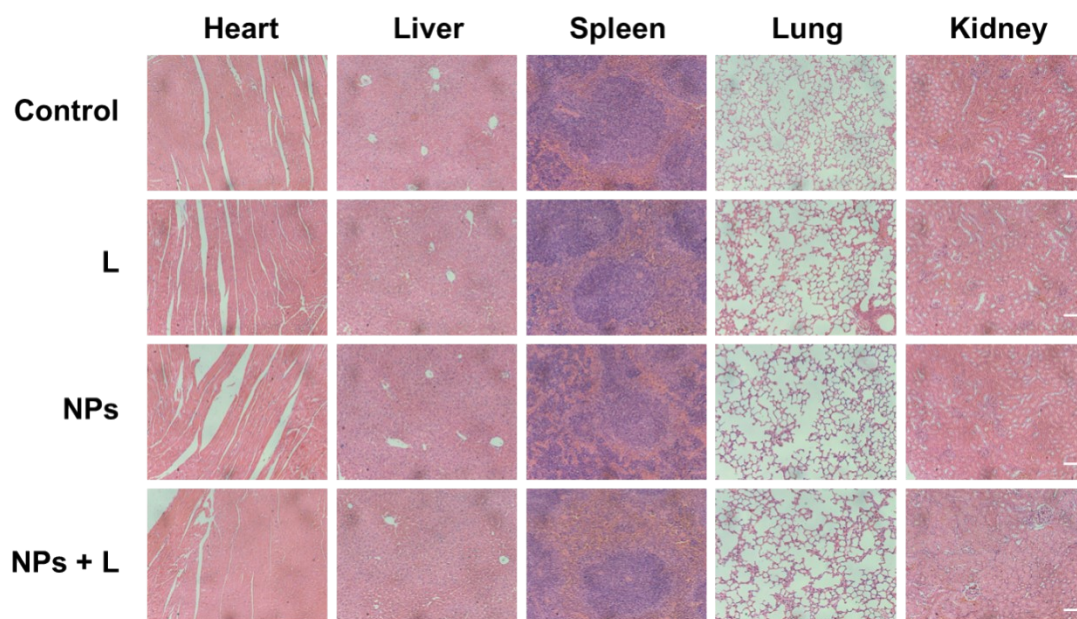


Figure S7. H&E stained tissue sections from the heart, liver, spleen, lung, and kidney of the mice after combination therapy(Lipo-Ce6@Fe₃O₄-DOX (NPs) and Lipo-Ce6@Fe₃O₄-DOX+Light (NPs+L)), PBS and Light (L) radiation at 650 nm as the controls. Scale bar: 100 μ m.