Supporting Information

Dual-sensitive dual-prodrug nanoparticles with light-controlled endo/lysosomal escape for synergistic photoactivated chemotherapy

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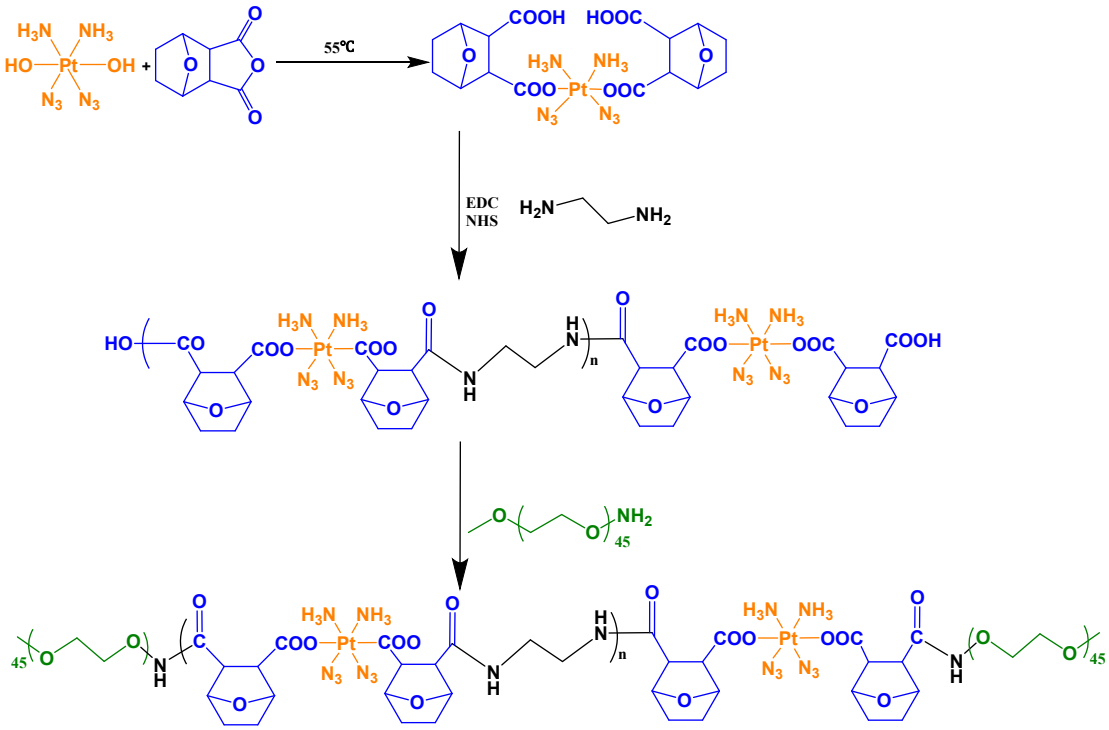
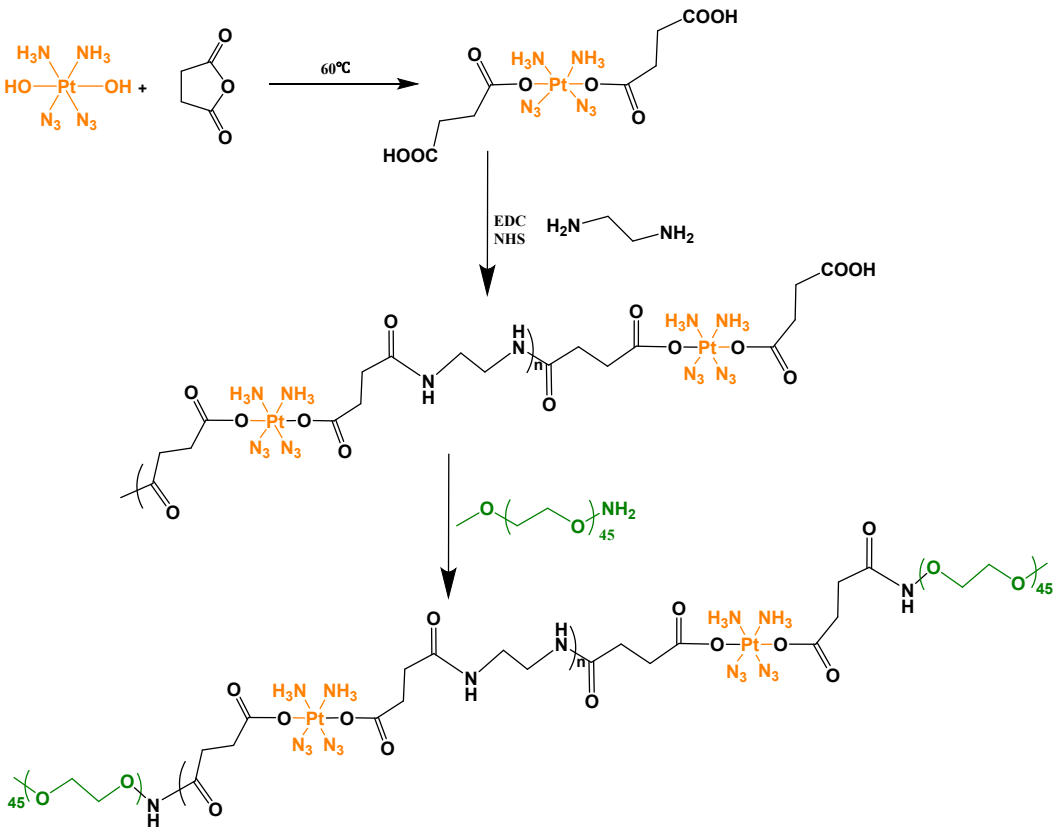
Cell culture

HeLa cells (human cervical carcinoma cell line) and L929 cells (human fibroblast normal cell line) were provided from Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences, Shanghai, China. HeLa cells and L929 were cultured in DMEM (10% fetal bovine serum, 5% CO_2 at 37 °C).



Scheme S1. The synthetic process of DDNP.



Scheme S2. The synthetic process of SSNP.

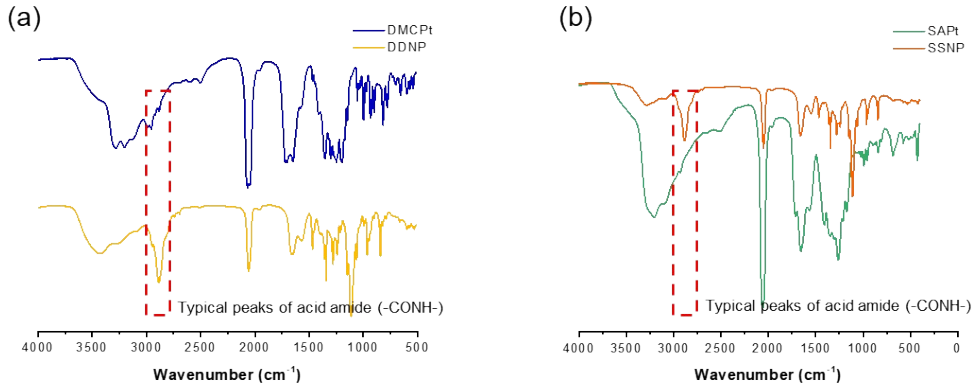


Fig. S1. (a) FI-IR spectra of DMCPt and DDNP. (b) FT-IR spectra of SAPt and SSNP.

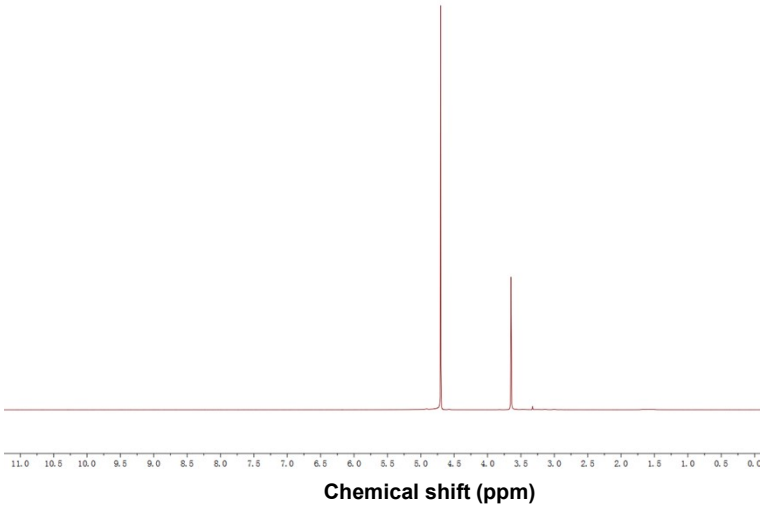


Fig. S2. Characterization of DDNP by ^{1}H NMR spectra in D_2O.

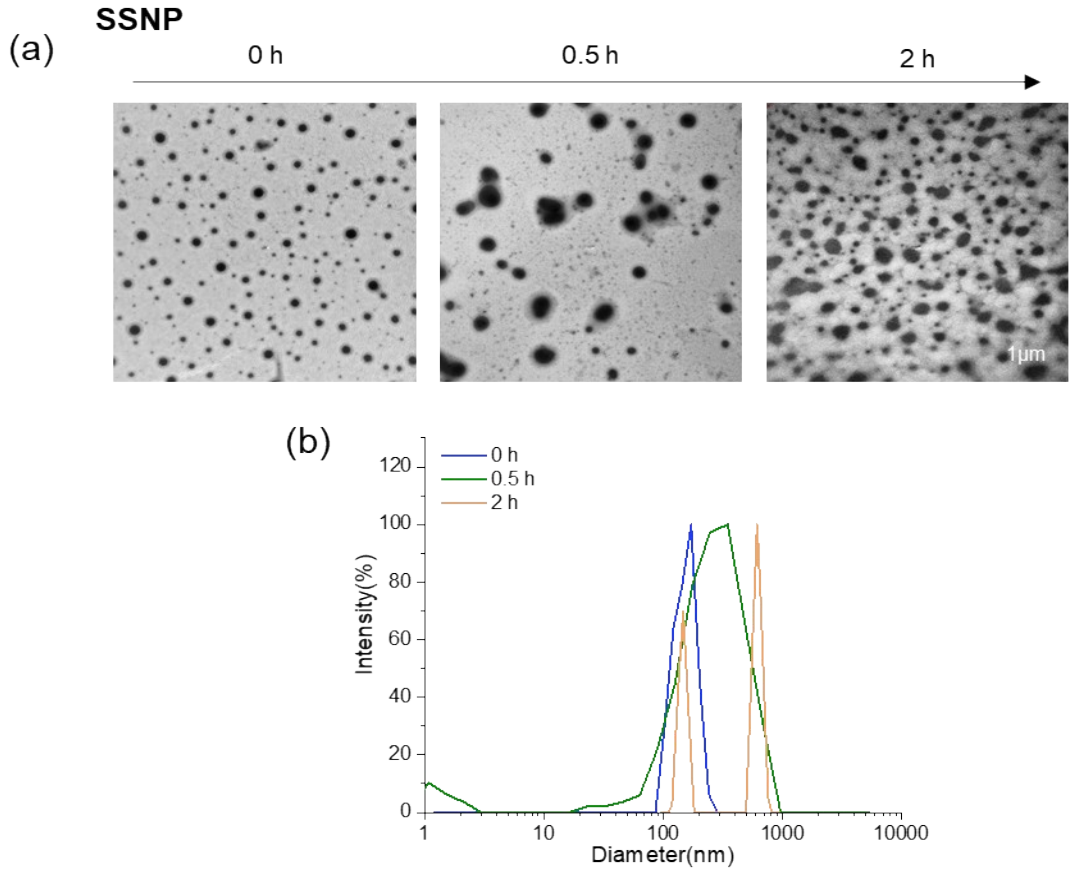


Fig. S3. (a) TEM images of the SSNP nanoparticle at different hours of UVA irradiation. (b) Size distribution changes of SSNP with UV light at different time intervals. (365 nm, 10 mW/cm^2)

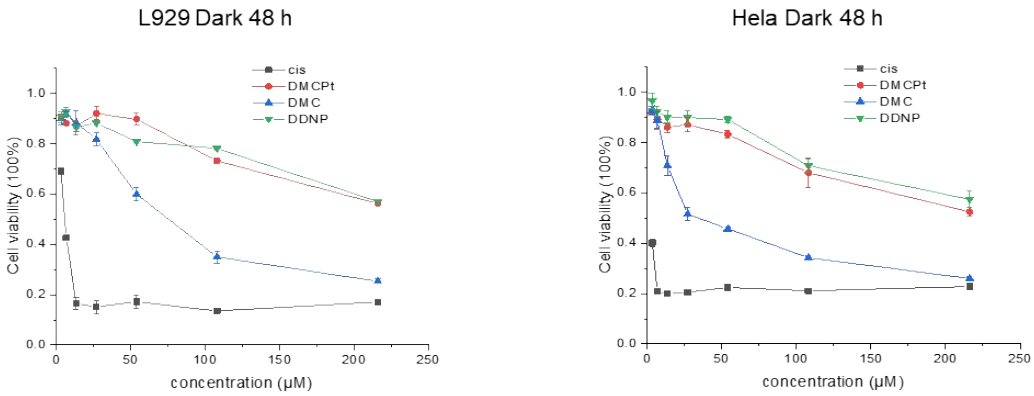


Fig. S4. Cell viability curves of L929 and Hela cells treated with cisplatin (cis), DMCPt, DMC, DDNP for 48 h in the dark.

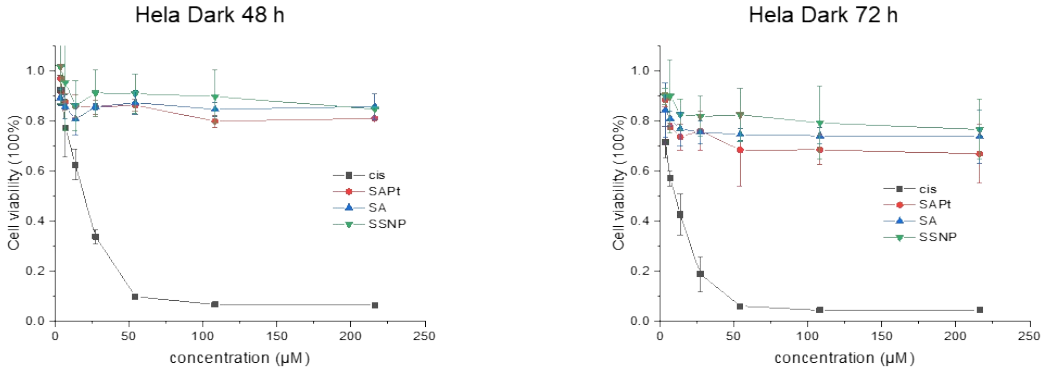


Fig. S5. Cell viability curves of Hela cells treated with cisplatin (cis), SAPt, SA, SSNP for 48 h, 72 h in the dark.

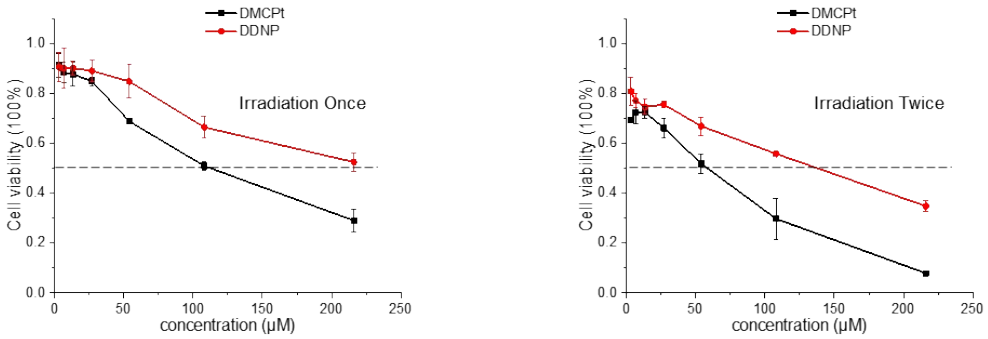


Fig. S6. Cell viability curves of Hela cells treated with DMCPt or DDNP under different times of UVA light for 48h.

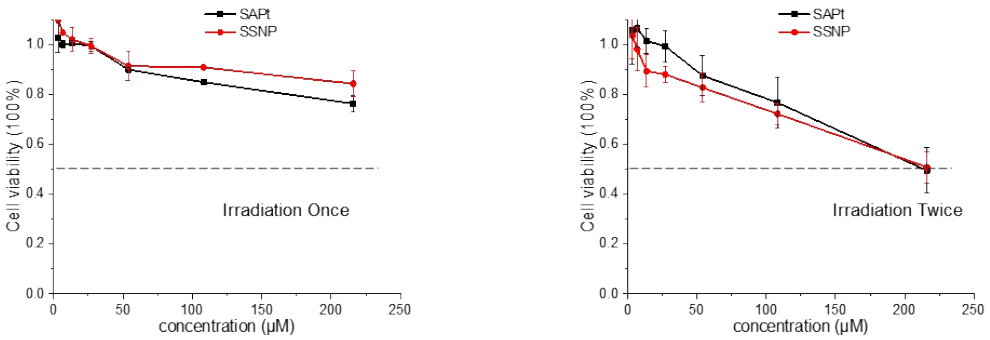


Fig. S7. Cell viability curves of Hela cells treated with SAPt or SSNP under different times of UVA light for 48h.

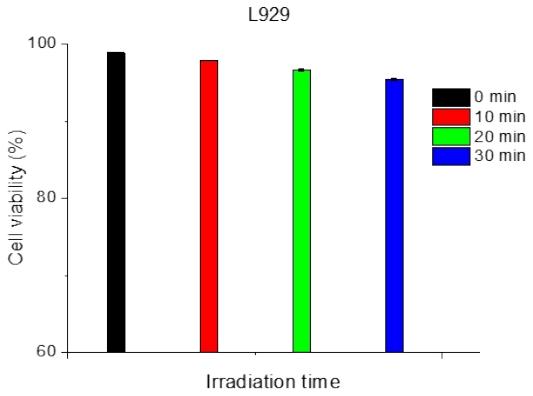


Fig. S8. Cell viability of L929 cells after UVA irradiation for different time.

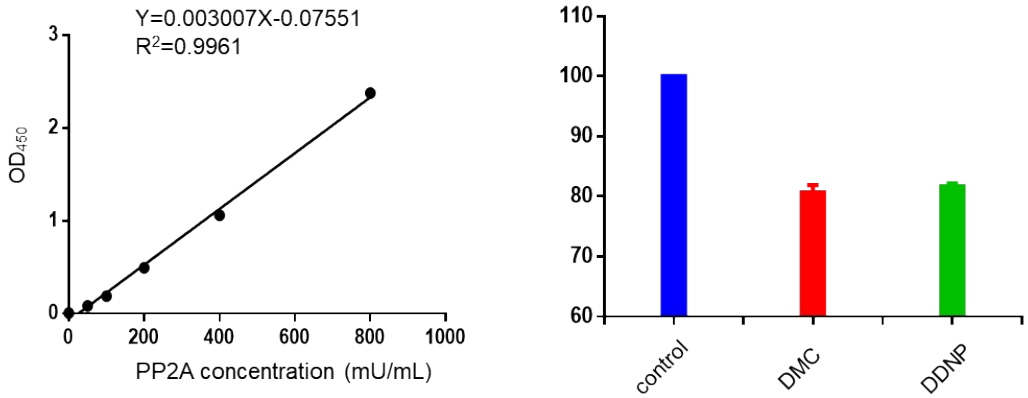


Fig. S9. PP2A activity of Hela cells after incubation of DMC and DDNP under UVA light.

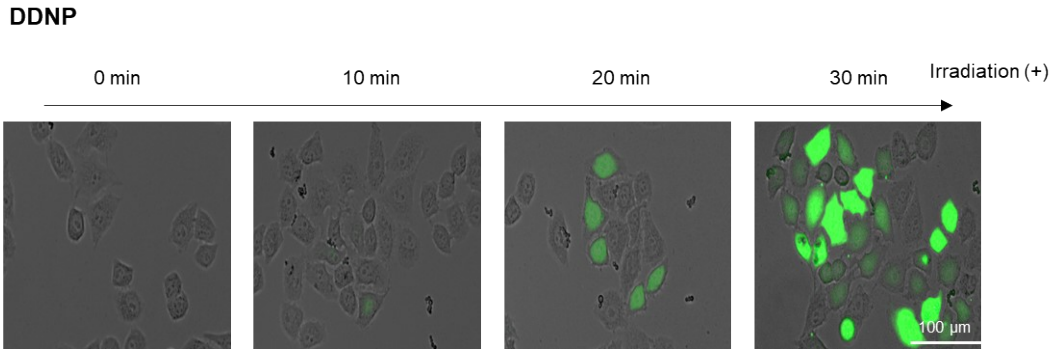


Fig. S10. CLSM images of DDNP-treated Hela cells with irradiation for different time and incubation with DCF-DA.

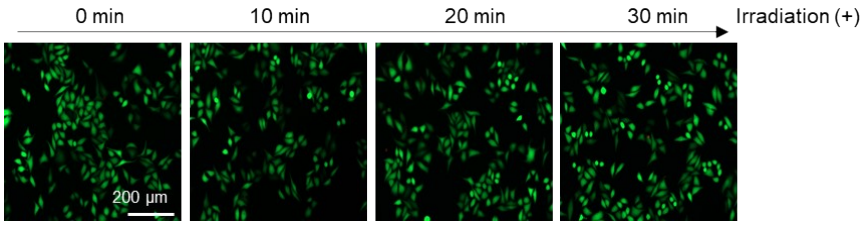


Fig. S11. Fluorescence microscopic images of DDNP-treated L929 cells co-stained with calcein AM (green, live cells) and propidium iodide (PI) (red, dead cells) with irradiation for various time.

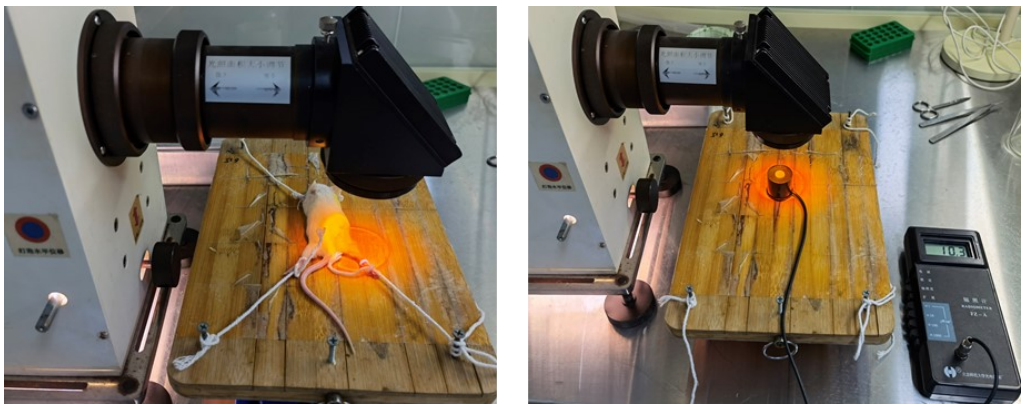


Fig. S12. The light model of mice in safe and comforable conditions.

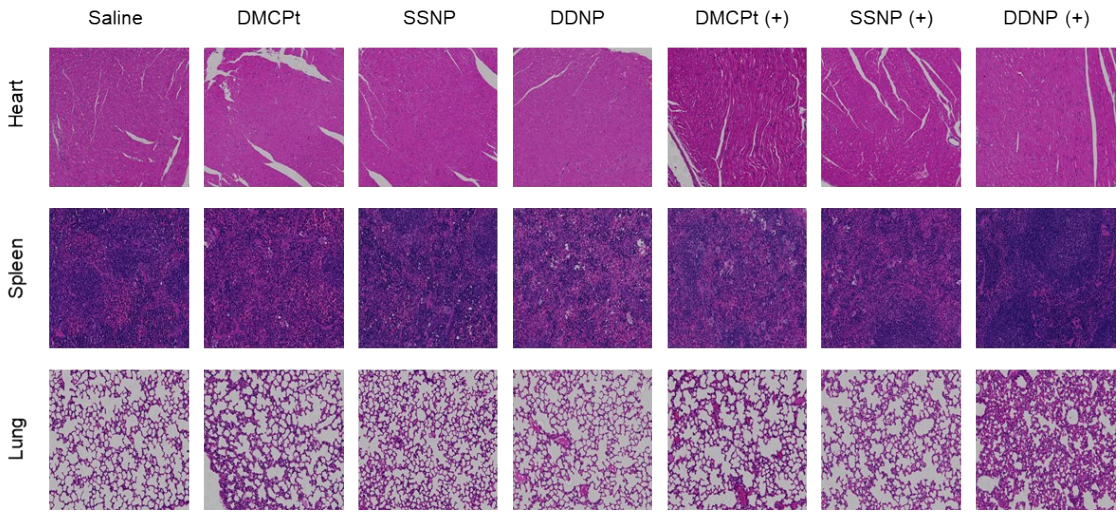


Fig. S13. Histological assessment of the main organs with H&E staining at the end of treatment.

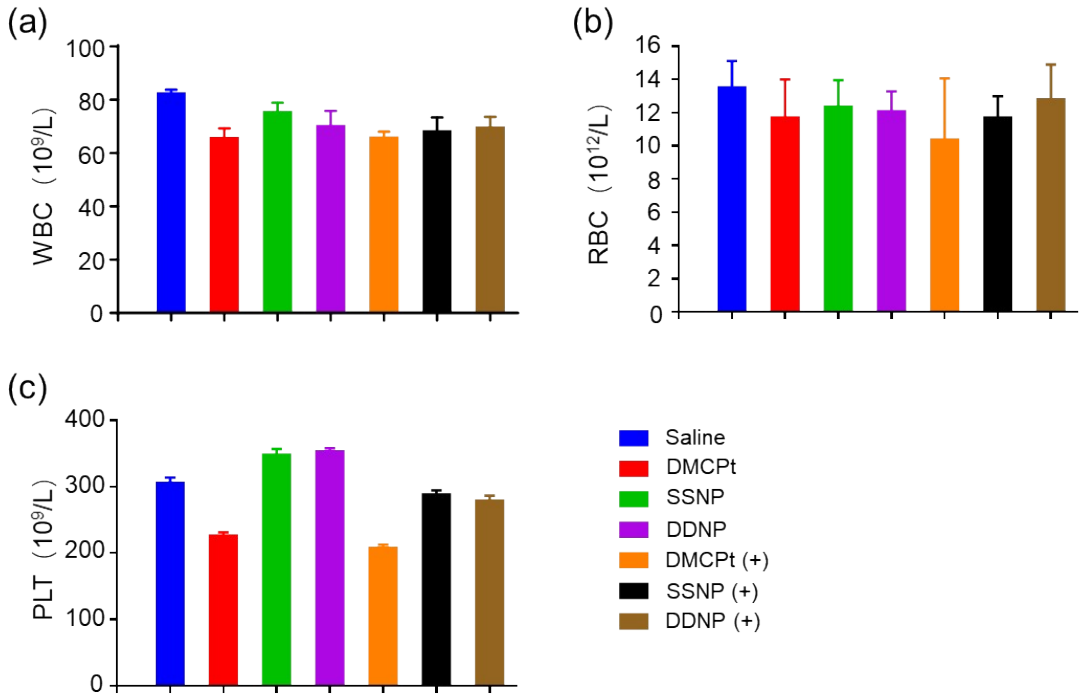


Fig. S14. Hematological analysis of mice after different treatments.

%	SSNP	DDNP
Pt	5.81	5.40

Table S1. ICP-OES analysis of Pt content in SSNP and DDNP.