Electronic Supplementary Material (ESI) for Biomaterials Science.

Supporting Information

Enhanced anti-tumor efficacy by inhibiting HIF-1α to reprogram TAMs via core-satellite upconverting nanoparticles with Curcumin mediated photodynamic therapy

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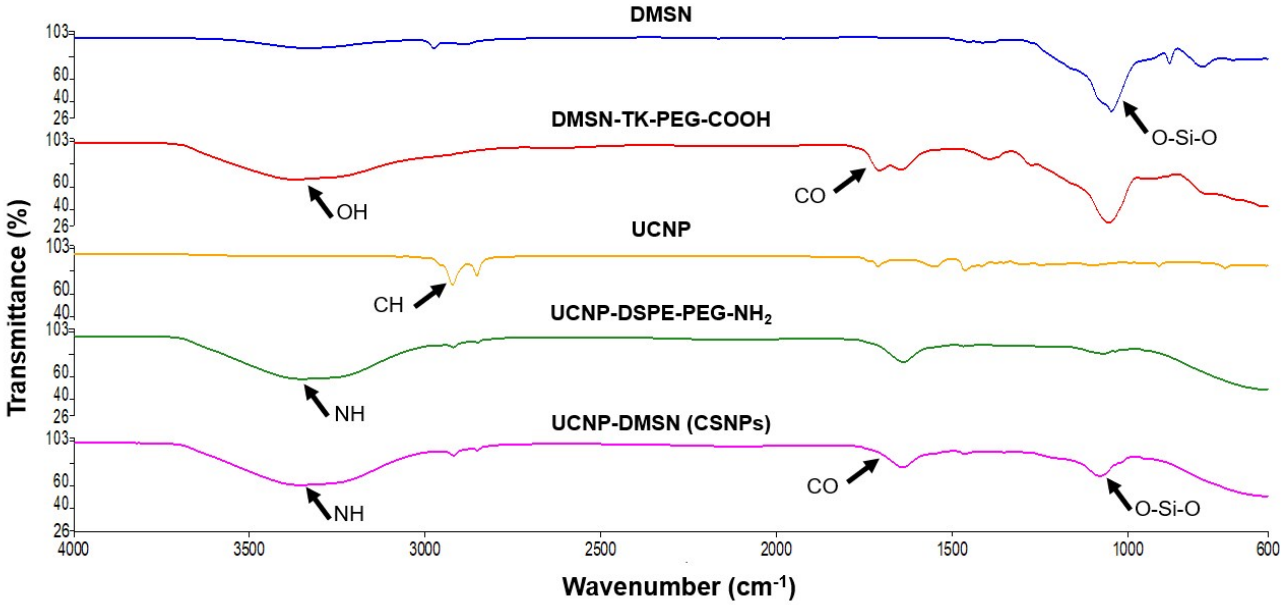

Fig. S1 FTIR spectrum of DMSN, DMSN-TK-PEG-COOH, UCNP, UCNP-DSPE-PEG-NH_2, and UCNP-DMSN (CSNPs).

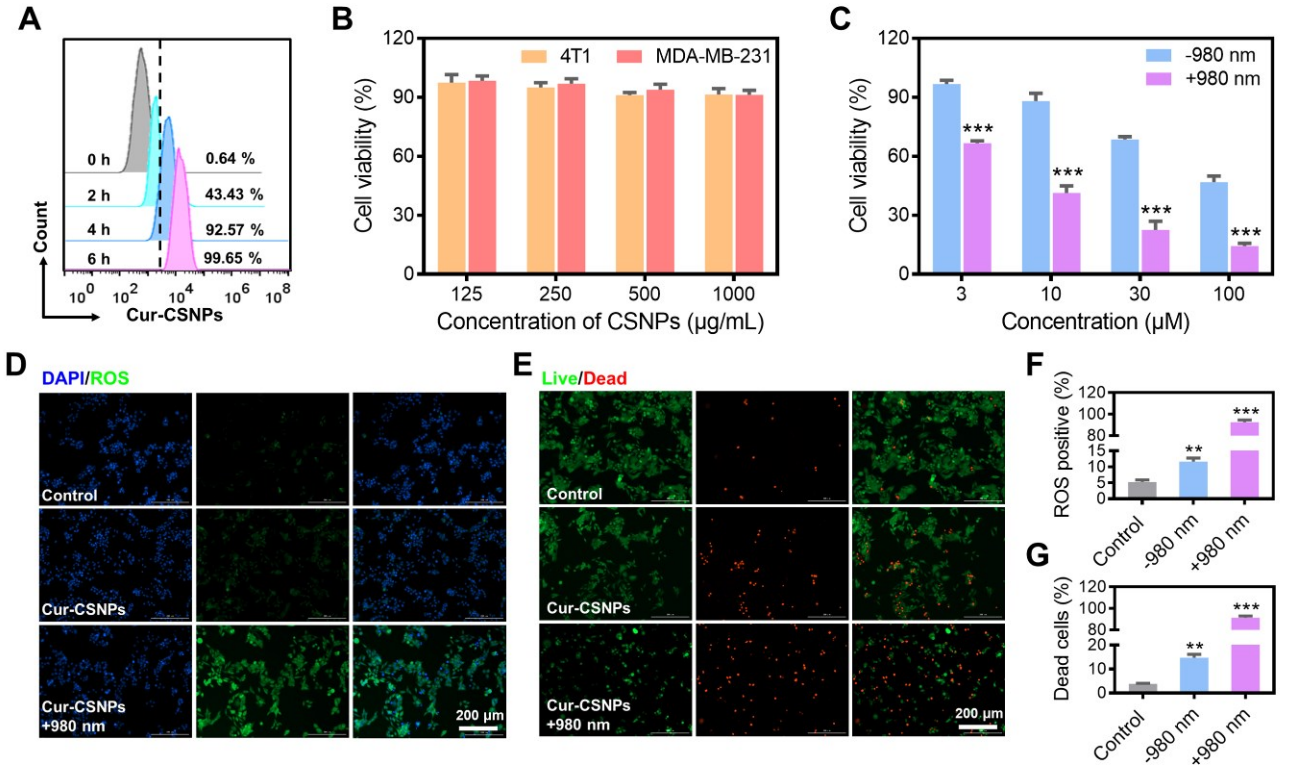

Fig. S2 Cellular uptake, ROS generation, and anti-tumor effect of Cur-CSNPs *in vitro*. (A) Cellular uptake of Cur-CSNPs in MDA-MB-231 cells by flow cytometry. Cell viability studied by CCK-8 assay for MDA-MB-231 cells after incubation with various concentrations of CSNPs (B), and Cur-CSNPs with or without 980 nm laser irradiation (C). (D) Fluorescence imaging and statistical analysis (F) of ROS by DCFH-DA staining in MDA-MB-231 cells. (Blue, DAPI) cell nuclei; (Green, DCF) ROS. (E) Calcein-AM/PI double stain and statistical analysis (G) of MDA-MB-231 cells treated with Cur-CSNPs (10 μM) with or without 980 nm laser irradiation. Green represents living cells, while red represents dead cells. Data are shown as mean ± S.D. (n= 3), **P < 0.01, ***P < 0.001.

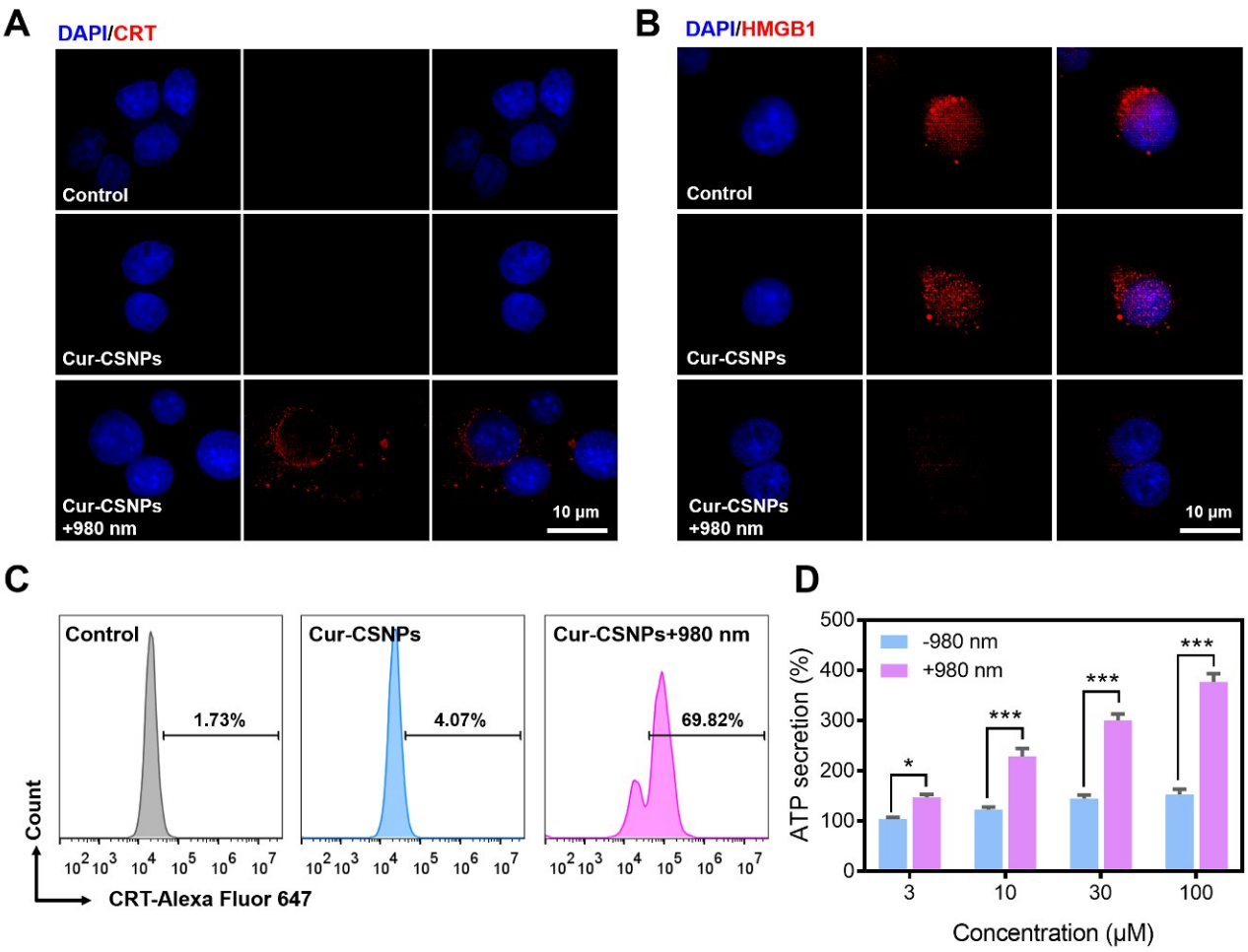

Fig. S3 Cur-CSNPs efficiently induced the ICD of MDA-MB-231 cells *in vitro*. (A and B) Fluorescence imaging of CRT exposed on the surface of MDA-MB-231 cells and HMGB1 release from MDA-MB-231 cells. (Blue, DAPI) cell nuclei; (Red) CRT and HMGB1. (C) The percentage of CRT exposed on the surface of DA-MB-231 cells analyzed by flow cytometry. (D) Quantification assessment of ATP secretion in different groups. Data are shown as mean ± S.D. (n= 3), *P < 0.05, ***P < 0.001.

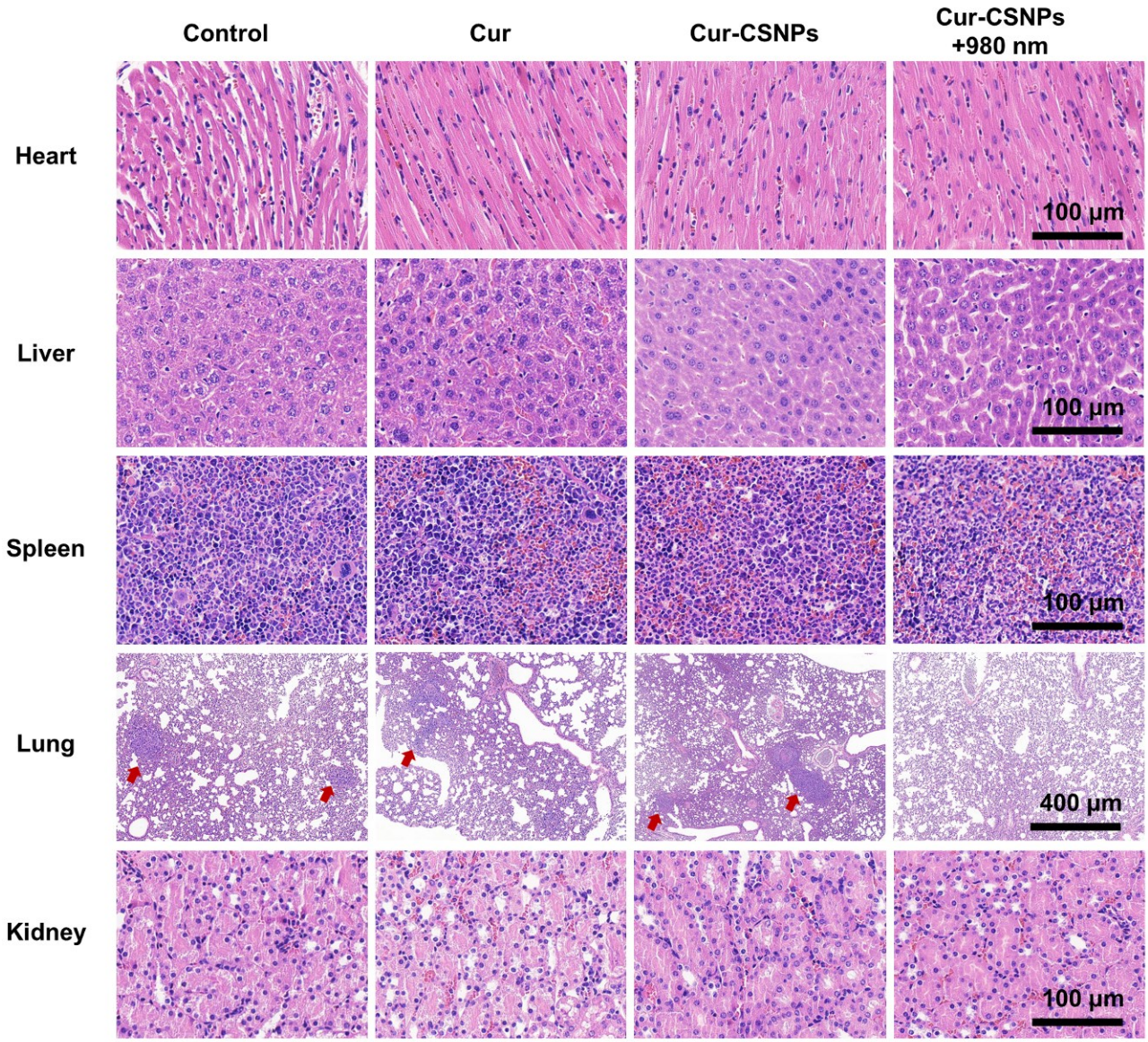

Fig. S4 Representative HE staining images of heart, liver, spleen, lung, and kidney from these mice in different groups. (Red arrows: Lung metastases)