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A Tumor Microenvironment-Responsive Co/ZIF-8/ICG/Pt Nanoplatform for Chemodynamic and Enhanced Photodynamic Antitumor Therapy

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Materials.

Methanol was obtained from Tianjin xinbaite Chemical Co., Ltd. Hydrogen peroxide (H_2O_2, 30%) were gained from Beijing Chemical Regent Co., Ltd. N,N-Dimethylformamide (DMF) was acquired from Tianjin Fuchen Chemical Reagent Co., Ltd. Zinc nitrate hexahydrate ($Zn(NO_3)_2 \cdot 6H_2O$), Cobalt nitrate hexahydrate ($Co(NO_3)_2 \cdot 6H_2O$) and Indocyanine Green (ICG) were purchased from Aladdin. 2-methylimidazole ($C_4H_6N_2$, 2-MI) was obtained from Beijing bailingwei Technology Co., Ltd. MB was obtained from MACKLIN. Sodium bicarbonate (99%, $NaHCO_3$) was purchased from Sigma-aldrich. The apoptosis detection kit and ROS detection kit was purchased from Shanghai BestBio. Cell Counting Kit-8 (CCK-8) was purchased from Beijing bioss. All chemical reagents were directly used without further purification

Characteristics.

Zeta potential experiments were tested by Zetasizer Nano (Malvern). The inductively coupled plasma-mass spectrometer (ICP-MS) was obtained by an iCAP 6300 of Thermo scientific. X-ray diffraction measurements (XRD) pattern was obtained by the D8 FOCUS diffractometer (Bruker). The morphology of NPs was observed by transmission electron microscopy (TEM) enploying a FEI Tecnai G2 S-Twin with a field emission gun operating at 200 KV and Scanning electron microscope (SEM) at an acceleration voltage of 10 kV. The Element distribution was acquired by Energydispersive X-ray spectrometry analysis. The X-ray photoelectron spectra (XPS) were obtained through ESCALAB 250. U-3310 spectrophotometer was employed to obtain UV−vis spectra. The Nitrogen (N_2) absorption/desorption analysis were tested by Micromeritics ASAP 2020 M). TGA was tested using the thermal analysis instrument (SDT 2960, TA Instruments, New Castle, DE) at the nitrogen atmosphere.

Cell Culture

Hela cancer cells were cultured at 37 °C under 5% CO_2 with DMEM supplemented with 1% (v/v) penicillin/streptomycin and 10% (v/v) fetal bovine serum (FBS)

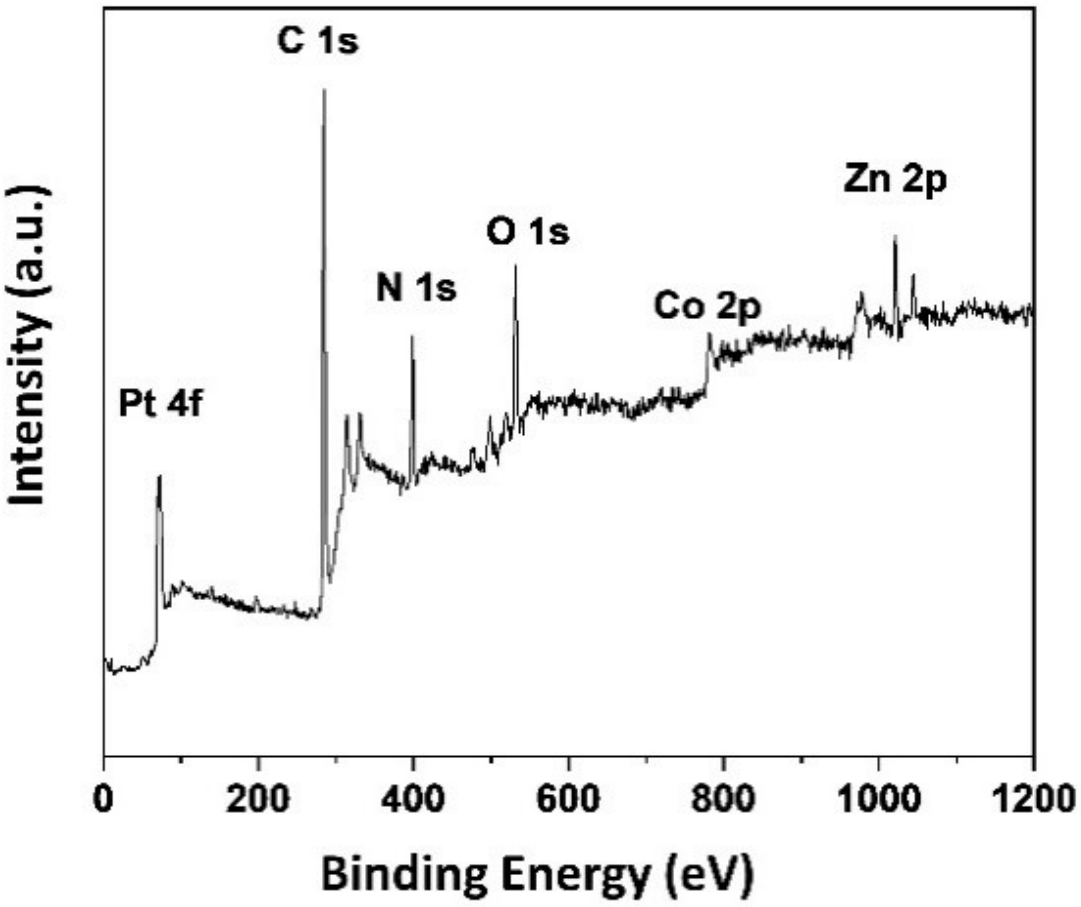

Figure S1. XPS spectrum of CZP.

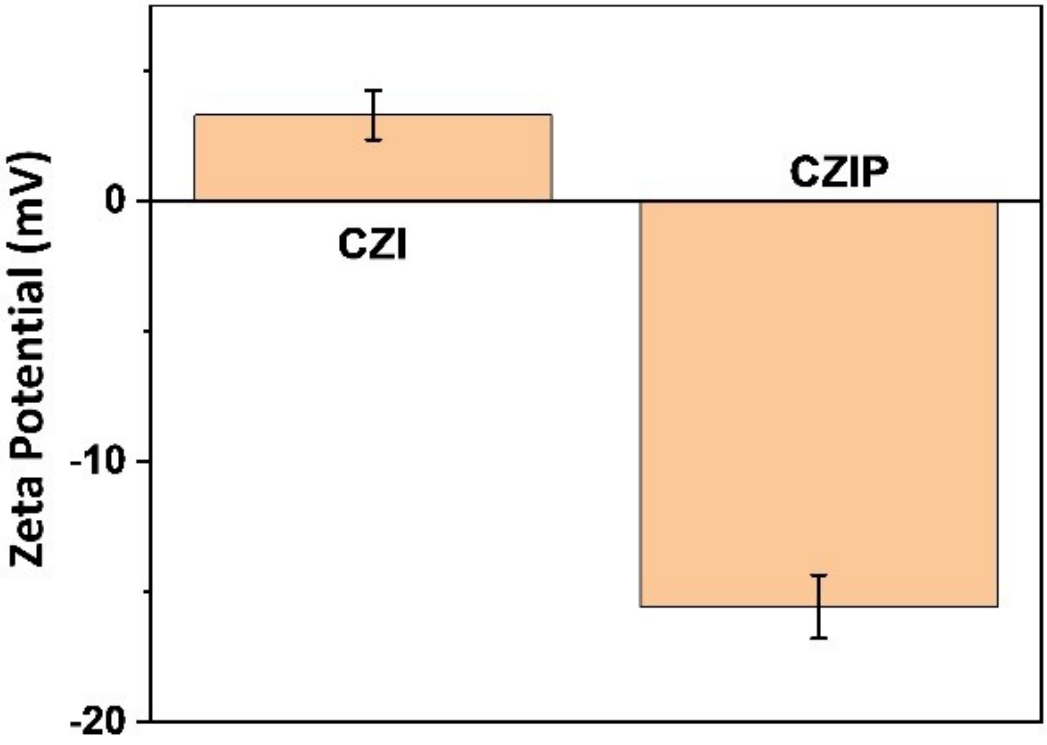

Figure S2. The Zeta potential of CZI and CZIP.

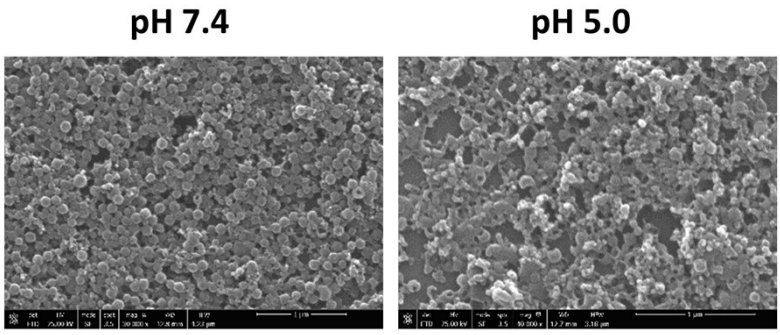

Figure S3. The morphology of CZP in PBS with different pH.

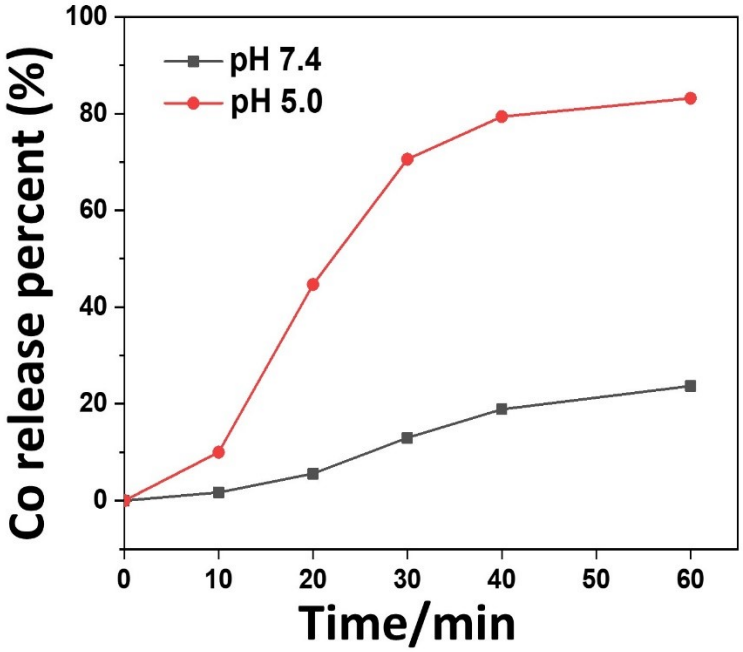

Figure S4. The release of Co ions from CZP at pH 5.0, and 7.4.

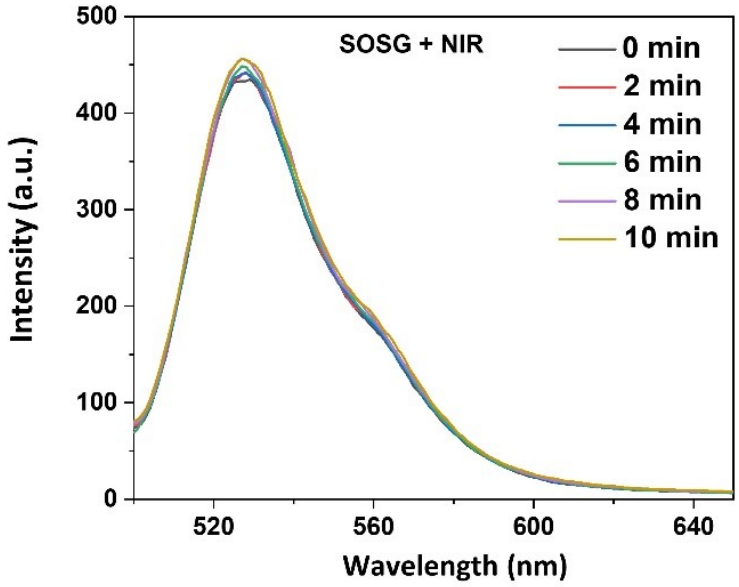

Figure S5. The fluorescence intensities of SOSG under NIR irradiation.

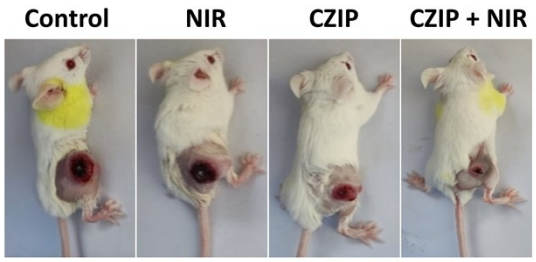

Figure S6. Photos of mice in each group after treatment.

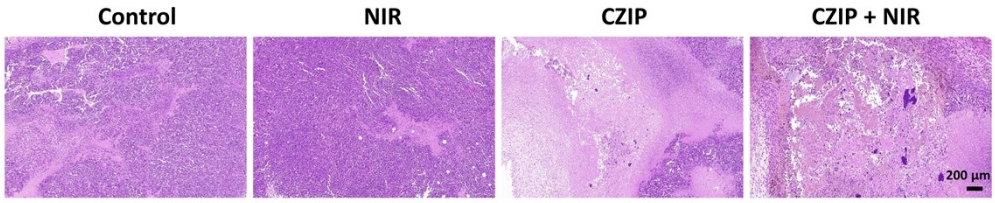

Figure S7. The H&E staining of tumor tissues after different treatments. Scale bar: 200 μm.

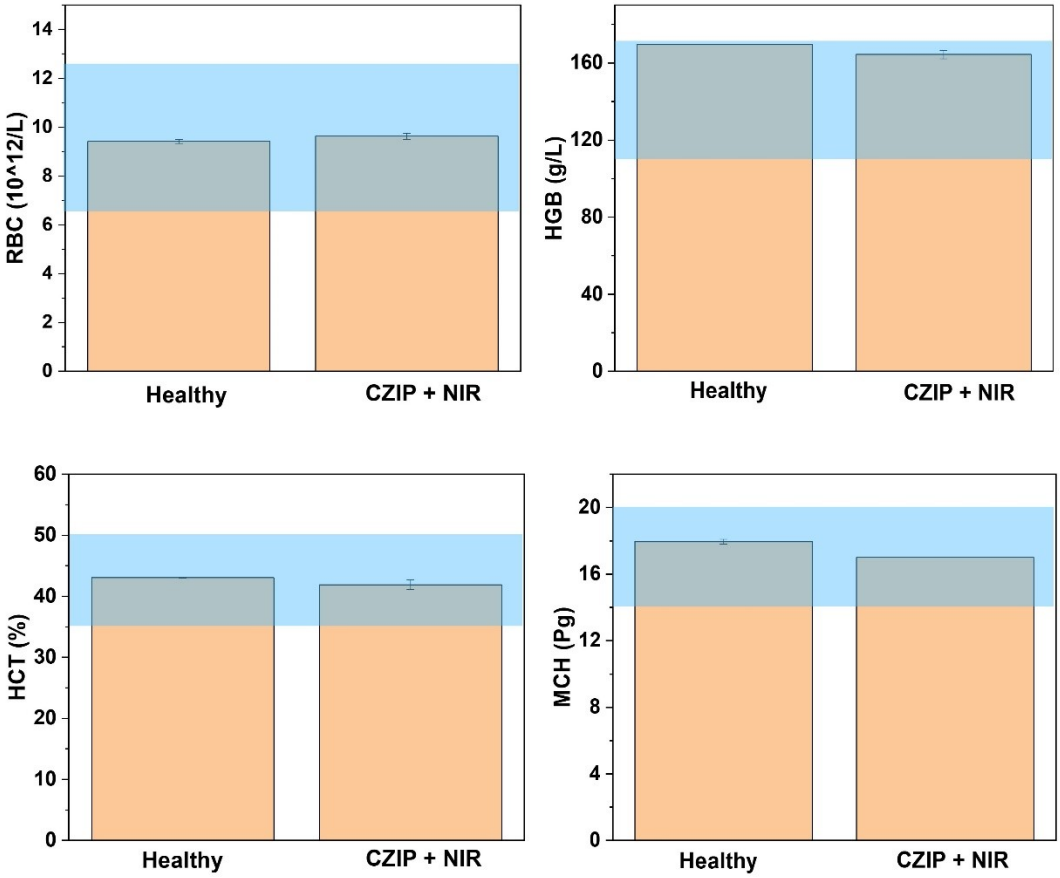

Figure S8.The hematological analysis of the healthy mice and mice treated with CZIP + NIR.

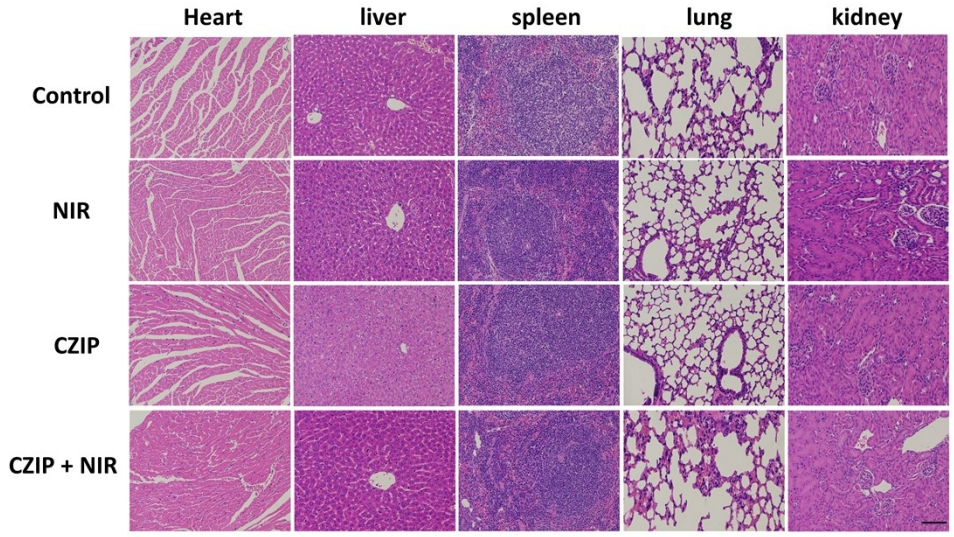

Figure S9. The H&E staining of the main organs of mice after different treatments. Scale bar: 100 μm.