Electronic Supplementary Information (ESI)

DC-Derived Whole Cell Cytokines Nano-Regulator for Remodeling Extracellular Matrix and Synergizing Tumor Immunotherapy

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Experimental details:

Characterization: The microscopic morphologies of TCP were observed by a transmission electron microscope (TEM, Hitachi, 120 kV). The hydrodynamic size was measured by a particle size analyzer (Zetasizer Nano ZS-90, Malvern, England). XRD patterns of TA and TCP were obtained using an X-ray diffractometer (Shimadzu Cu Kα radiation, λ = 0.15405 nm) with a scanning rate of 10° min^{-1} with 2θ ranging from 20 to 80°. Moreover, the absorbance values between 230 and 600 nm wavelength and the cell counting kit (CCK-8) assay in 450 nm were collected by the Plate Reader (EnSpire Multimode Plate Reader, PerKin Elmer).

Intracellular Uptake: To determine the intracellular uptake, TCP was first loaded with coumarin-6 by the addition of coumarin-6 in ethanol. The 4T1/B16-F10/CAF cells were cocultured with coumarin@TCP for 8 h, followed by washing twice with PBS to remove free TCP. 1 μg mL^{-1} of Hoechst 33258 was added to the medium and cultured for 30 min. The dye was removed by washing twice with PBS. The fluorescent images were taken by LSCM. The TCP were tracked by the fluorescence of coumarin (λ_{ex} = 490 nm, λ_{em} = 515 nm).

***In vitro* cytotoxicity:** Firstly, 4T1, B16-F10 and CAF were cultured in DMEM media supplemented with 1% penicillin/streptomycin (PS) and 10% fetal bovine serum (FBS). Then the cells were seeded into 96-well plates (~5000 cells per well) at 37°C with a 5% CO_2 atmosphere for 24 h. 200 μg mL^{-1} of TCP were added after the removal of DMEM completed medium, and the cells were cultured for another 24 h before CCK-8 assay. After the cells were cultured with CCK-8 solution for 1 h, a microplate reader was applied to measure the optical density value at a wavelength of 450 nm.

Cell migration assay: 4T1 cells were seeded in 6-well plate for 24 h (10^5 cells per well). Then the cells were wounded by dragging a 10 μL pipette tip. PBS buffer was used to wash the cells for three times to remove the cellular debris and different mediums (cytokine: obtained from DC cultured supernatant, and TCP (50 μg mL^{-1}) were added into DMEM basic medium and cultured at 37ºC. The cells images were recorded after co-culturing for 12, 24 and 48 h.

Supplementary Figures:

Figure S1. The digital photos of 4T1-bearing mice on day 15.

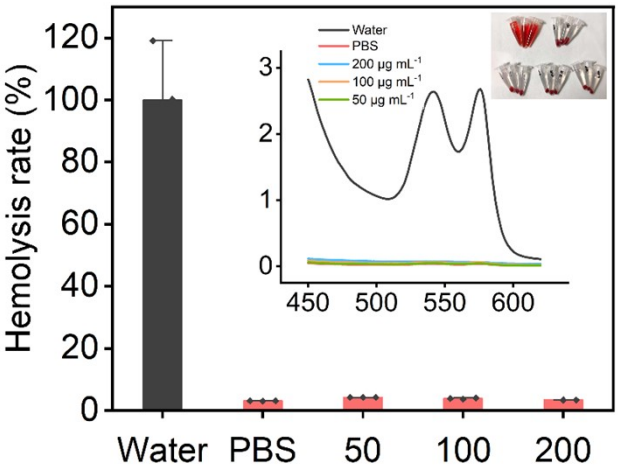

Figure S2. Hemolysis rate after the treatments of different concentrations of TCP. Water was set as positive control and PBS as negative one.

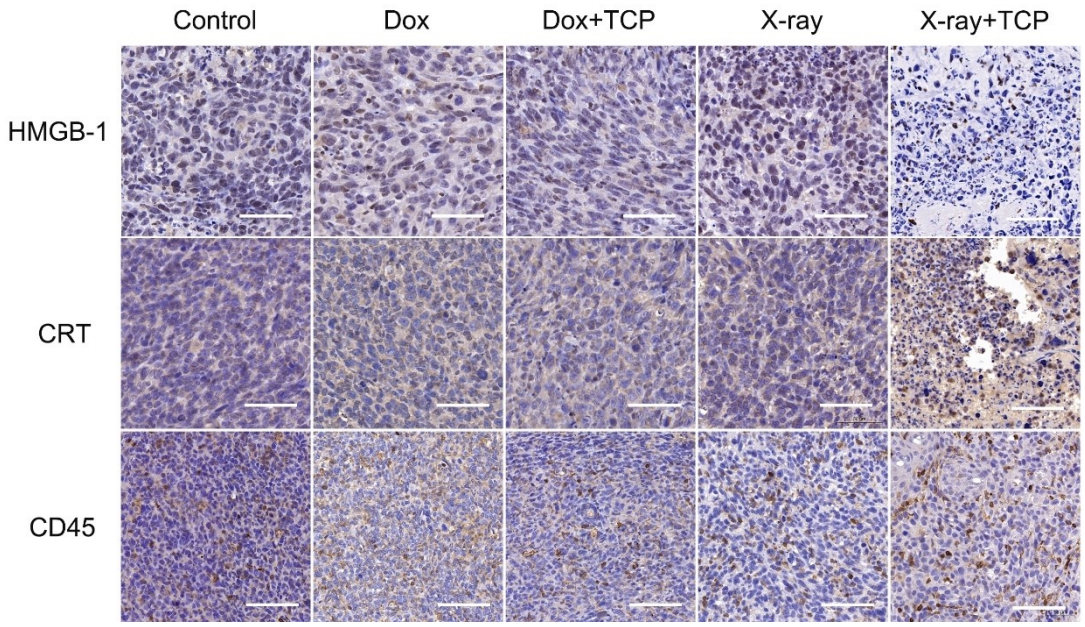

Figure S3. Immunohistochemical slices of tumor stained with HMGB-1, CRT and CD45 after different treatments (control, Dox, Dox+TCP, X-ray and X-ray+TCP). Scale bar: 50 μm.