Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Tea Polyphenol Carrier-enhanced Dexamethasone Nanomedicines for Inflammation-targeted Treatment of Rheumatoid Arthritis

Zeng Yi [1,2], Yaqin Ran [1,2], Xiangyu Chen[1,2], Qiulan Tong[1,2], Lei Ma[1,2], Yunfei Tan[1,2], Xiaomin Ma[1,2], Xudong Li[1,2]*

1National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, China

2College of Biomedical Engineering, Sichuan University, Chengdu 610064, China

*Corresponding Author

Xudong Li

E-mail: xli20004@scu.edu.cn

Experimental Methods

Ultraviolet-visible (UV-vis) spectrometer

The UV-vis characteristic absorption of nanoparticles in the wavelength range from 400 nm to 190 nm were measured by using a UV-visible spectrometer (Persee TU-1901, China) with the scan speed of 1 nm s^{-1}.

Fourier Transform Infrared (FT-IR) spectrometer

The FT-IR spectra were recorded by fourier infrared spectrometer (INVENIO R, Bruker, Germany) in the wavenumber range from 4000 $cm^{-1}$to 400 cm^{-1} with a scanning resolution of 4 cm^{-1} and 16 scans were performed for each spectrum.

Matrix-assisted laser desorption ionization time-of-flight mass spectrometer (MALDI-TOF-MS)

The lyophilized nanoparticles were dissolved in DMSO, and the mass spectra of samples were recorded using the MALDI-TOF-MS (AUTOFLEX III, Bruker, Germany).

Proton nuclear magnetic resonance (^{1}H NMR) spectrometer

The ^{1}H NMR of samples were performed using the nuclear magnetic resonance spectrometer (AV II-400 MHz, Bruker, Germany). Samples were dissolved in DMSO-d_6.

Supplementary Figures

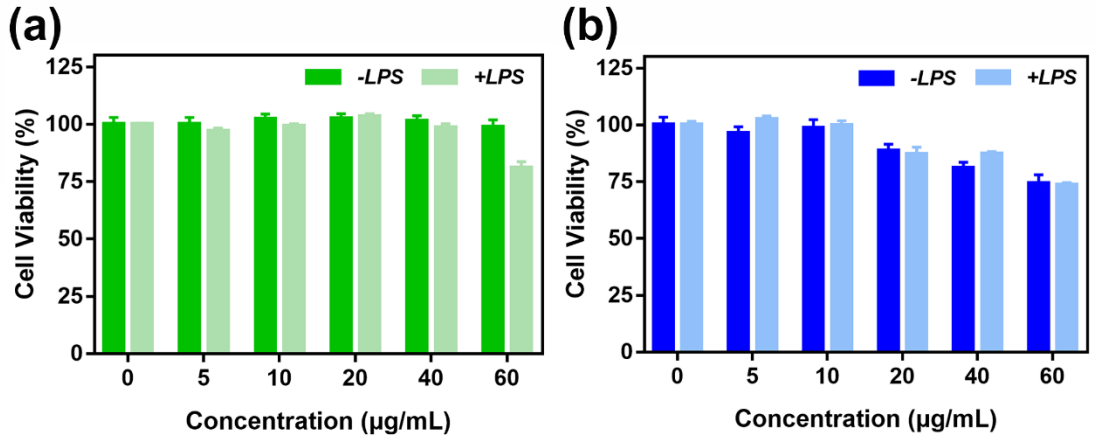

Figure S1 Cell viability of RAW264.7 with/without LPS/INF-γ stimulation after treating with different concentrations of (a) EGCG and (b) PPE-NPs.

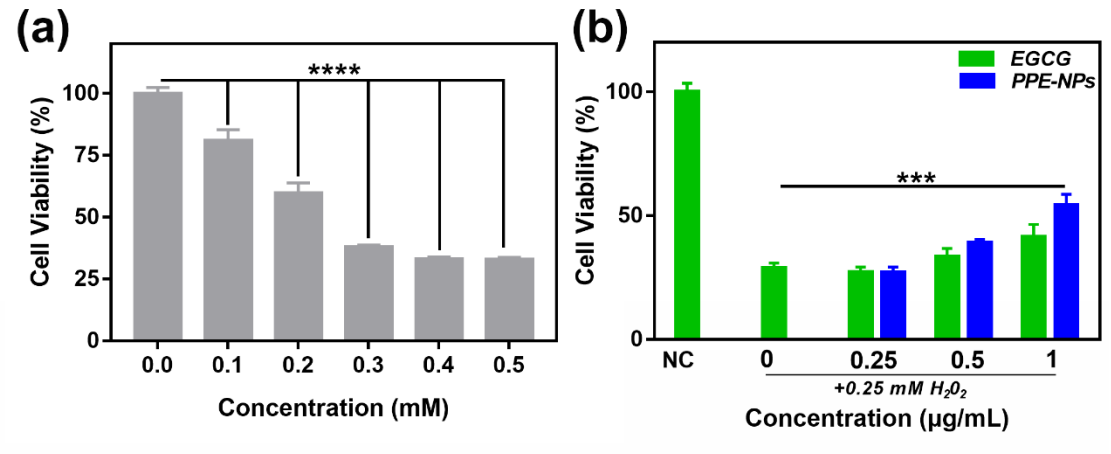

Figure S2 Protective ability of PPE-NPs against the oxidative stress damage of HUVEC. (a) Cell viability of HUVEC treated with different concentrations of H_2O_2. (b) Cytoprotection of PPE-NPs to HUVEC incubated with 0.25 mM H_2O_2.

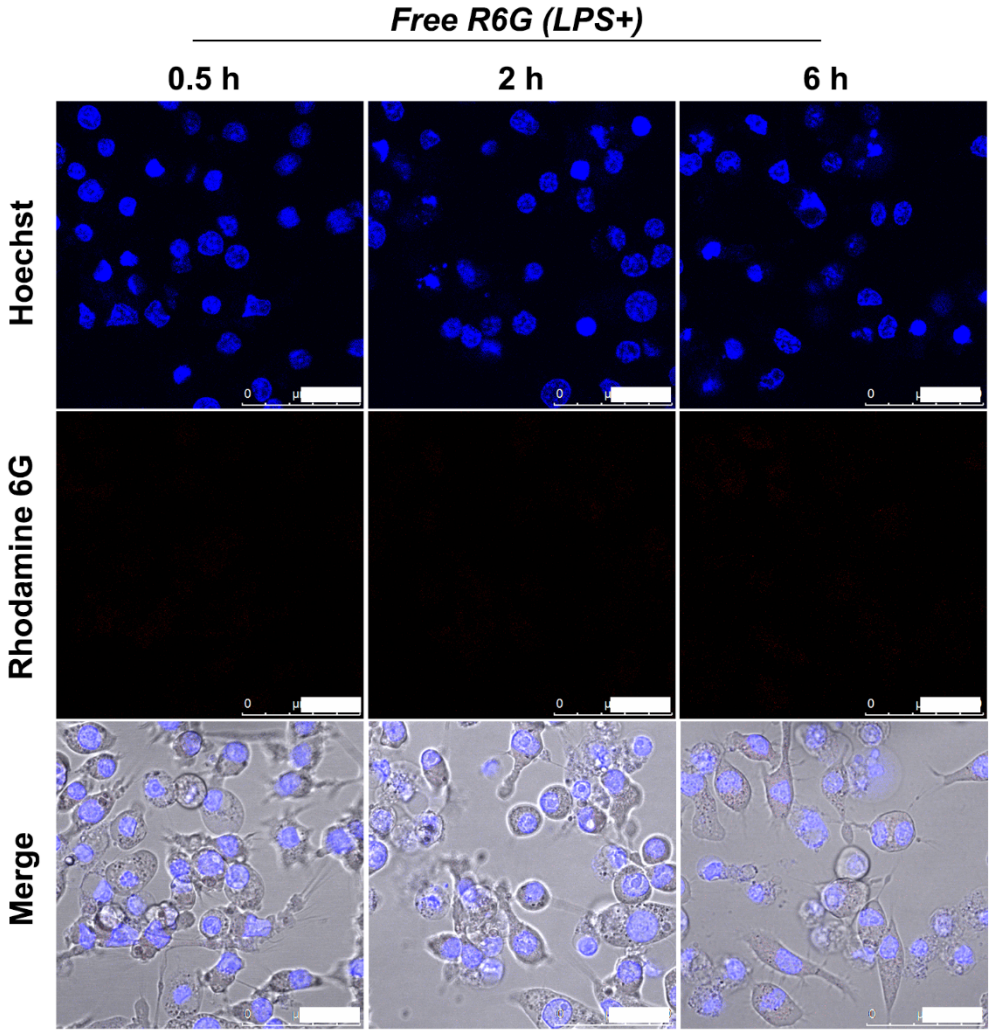

Figure S3 Cellular uptake of Free R6G in RAW264.7 with LPS/INF-γ stimulation after co-cultured with Free R6G for 0.5 h, 2 h and 6 h. The nucleus were stained with Hoechst33342 (blue) and the red fluorescence refers to R6G

(scale bar = 50 μm)

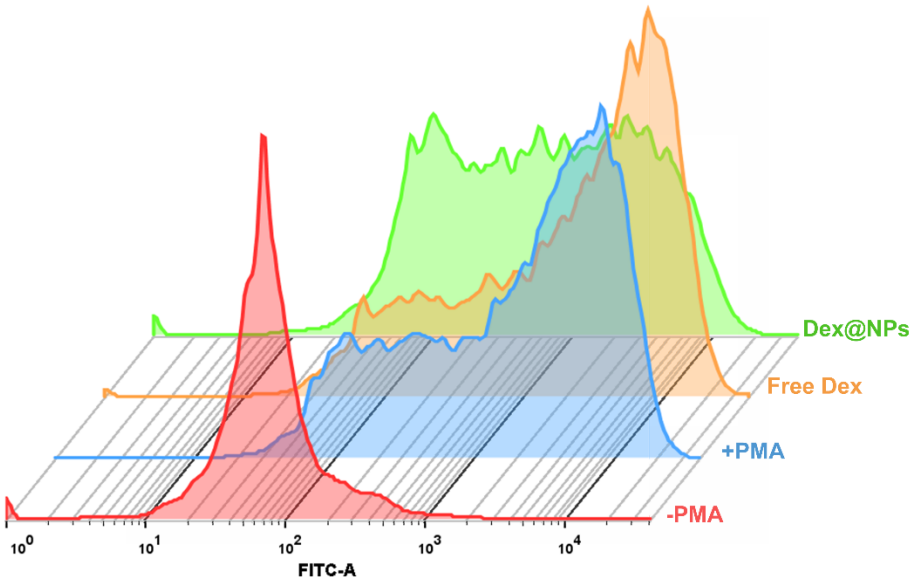

Figure S4 Flow cytometer results showing the intracellular ROS signal.

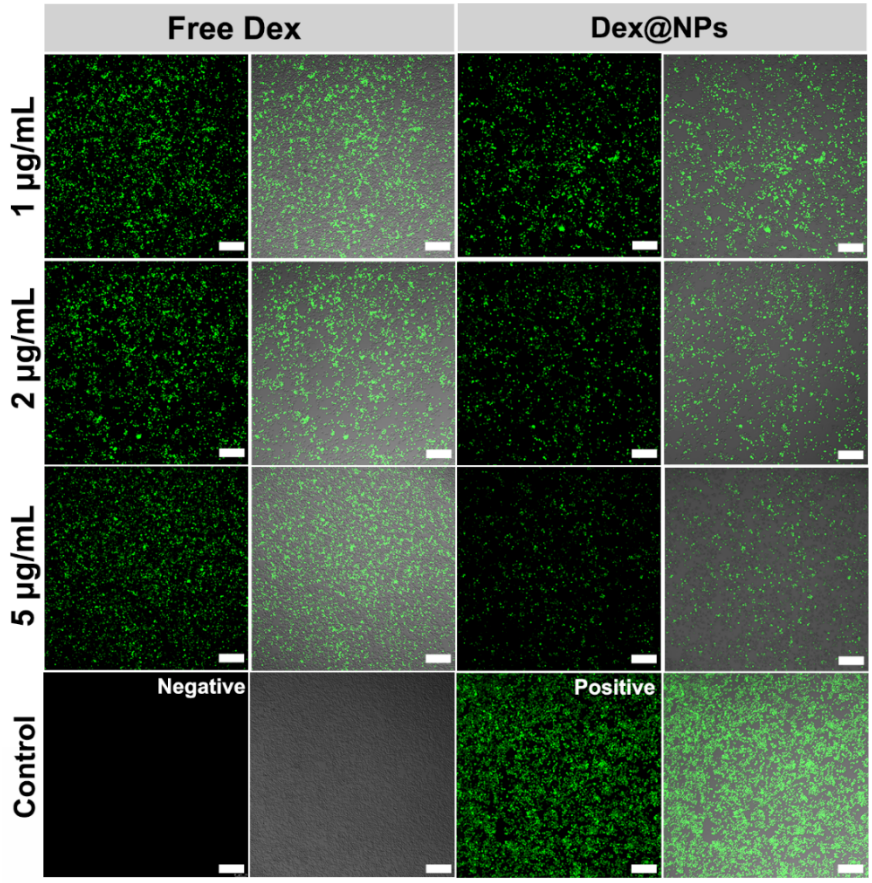

Figure S5 Representative fluorescence images reflecting the intracellular ROS signal of RAW264.7 after treating with different concentrations of Free Dex and Dex@NPs.