

Supplementary Material

Preparation, Characterization and Multiple Biological Properties of Peptide-Modified Cerium Oxide Nanoparticles

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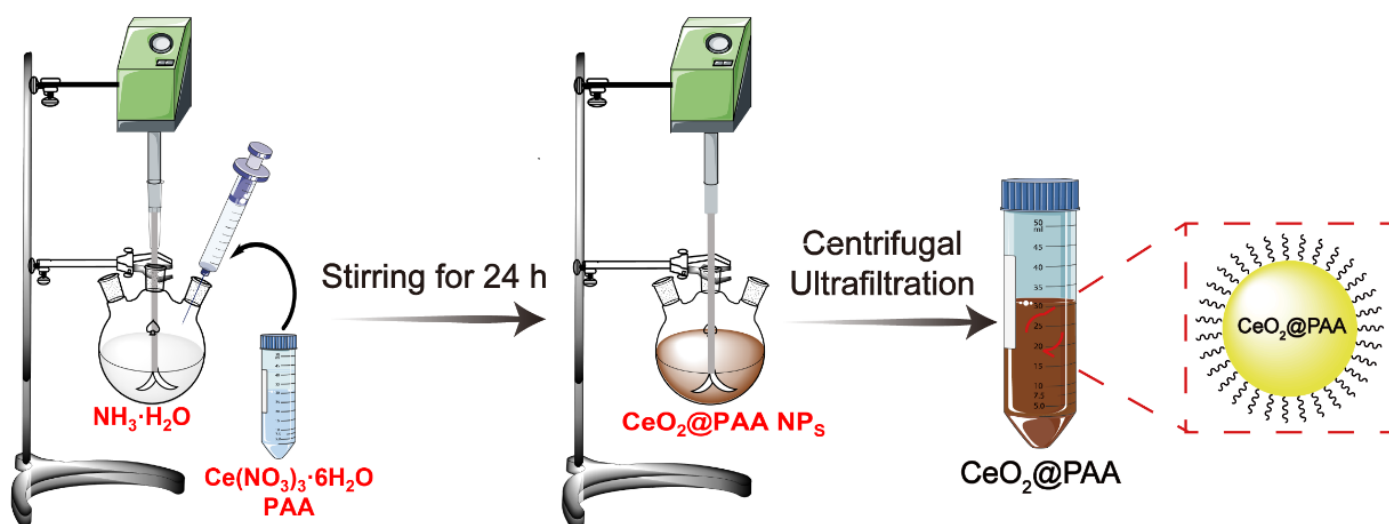


Figure S1. Schematic illustration of the preparation of CeO₂@PAA NPs.

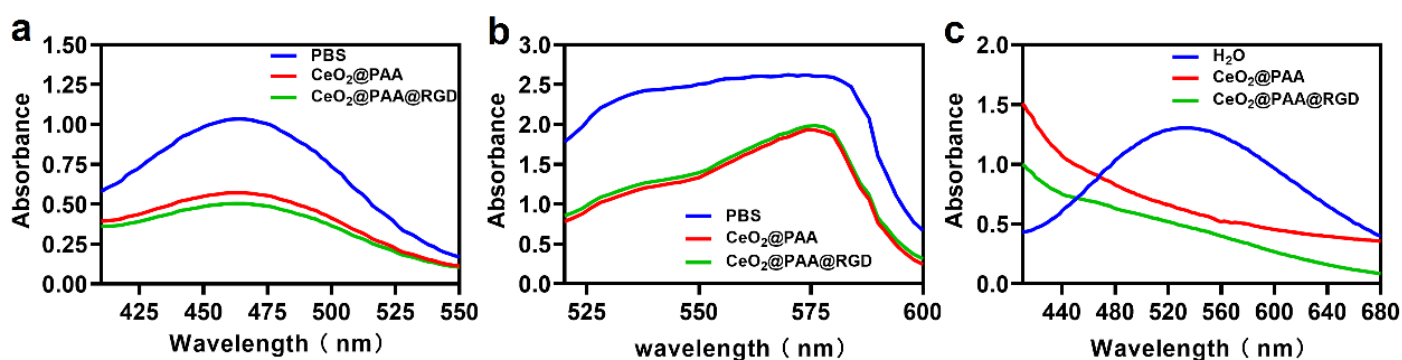


Figure S2. UV-vis absorption spectra of CeO₂@PAA and CeO₂@PAA@RGD towards (a) $\text{O}_2^{\cdot -}$ and (b) H₂O₂ and (c) $\cdot\text{OH}$.

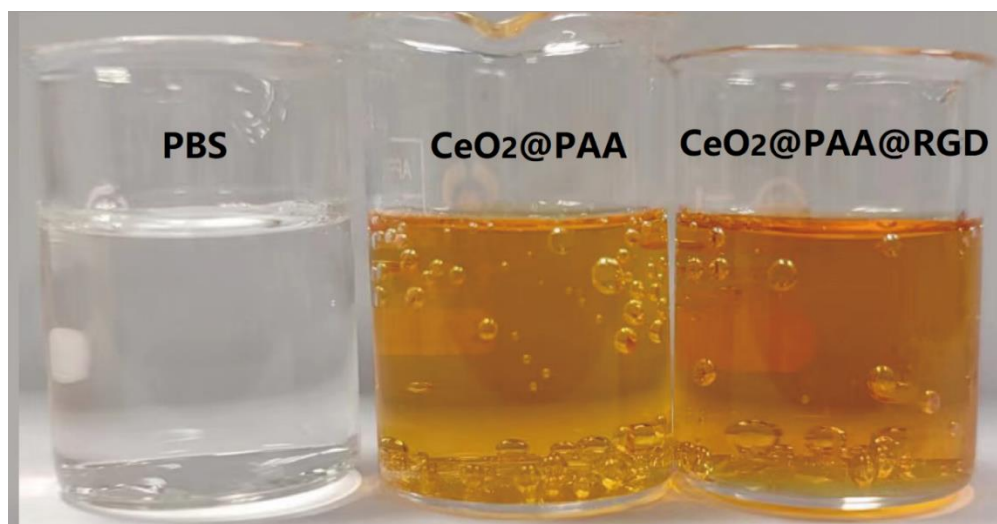


Figure S3. *In vitro* oxygen bubbles production with a significant yellow colour in nanoparticles to assess CAT-like activity.

Table S1. Reaction system for the detection of SOD-like enzyme activity

Reagents	Sample	Blank control 1	Blank control 2	Blank control 3
Sample (μL)	2	-	-	2
SOD assay buffer (μL)	-	2	22	20
WST-8/enzyme working solution (μL)	160	160	160	160
Reaction start working fluid (μL)	20	20	-	-

Table S2. Reaction systems for the detection of $\cdot\text{OH}$

Reagents	A_0 (μL)	A_x (μL)	A_{x0} (μL)
FeSO_4	50	50	50
Ethanol-salicylic acid	50	50	50
Distilled water	15	-	50
Sample (10 mg/mL)	-	15	15
H_2O_2 (30%)	50	50	-

Table S3. Reaction system for the synthesis of cDNA by reverse transcription.

Component	Volume
5 x Reaction Buffer	4 µL
Oligo (dT) ₁₈ Primer (100 µM)	0.5 µL
And Random Hexamer primer (100 µM)	0.5 µL
Servicebio®RT Enzyme Mix	1 µL
Total RNA *	10 µL
RNase free water	Add to 20 µL

Table S4. Primers used to detect mRNA expression of pro-inflammatory and anti-inflammatory related genes.

Gene	Forward Primers	Revers Primers
CD86	CTGGACTCTACGACTTCACAATG	AGTTGGCGATCACTGAGAGTT
TNF- α	CCTGTAGCCACGTCGTAGC	AGCAATGACTCCAAAGTAGACC
IL-6	ATCCAGTTGCCTTCTTGGGACTGA	TTGGATGGTCTTGGTCCTTAGCCA
CD206	CTGCAGATGGGTGGGTATT	GGCATTGATGCTGCTGTTATG
VEGF	AGGAGAACTGCTGTGTACGC	CCGTGCTATGGGTATGTCT
IL-10	ACTGGCATGAGGATCAGCAG	CTCCTTGATTCTGGGCCAT