

Supporting information

Superoxide Dismutase-Embedded Metal-Organic Frameworks via Biomimetic Mineralization for the Treatment of Inflammatory Bowel Disease

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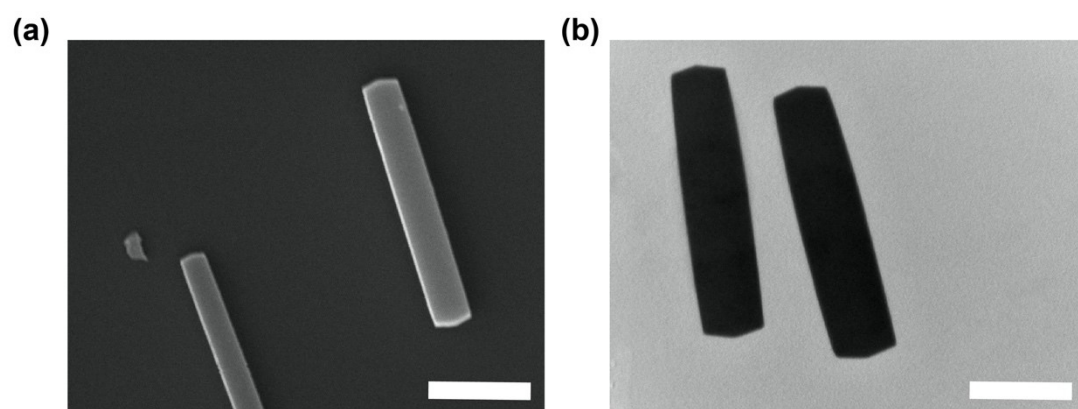


Figure S1. SEM (a) and TEM (b) images of ZIF-zni crystalline. Scale bar: 2 μm .

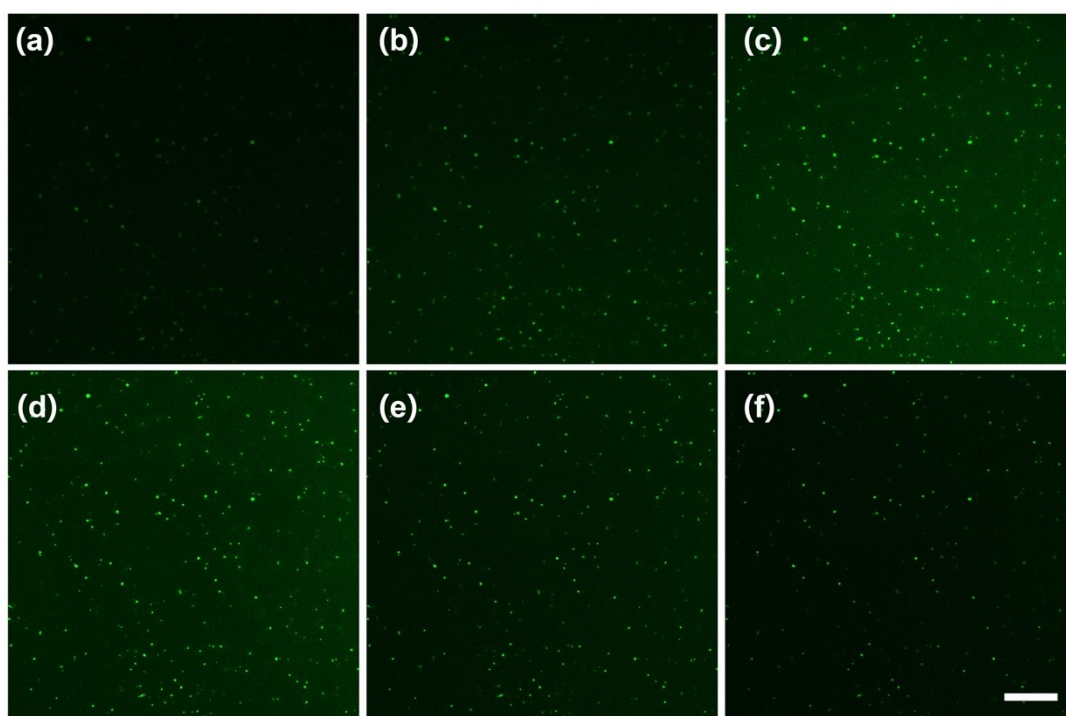


Figure S2. Layer-by-layer CLSM images of FITC-SOD@ZIF-zni composites at different scanning depth along the z-axis (a-f). Scale bar: 100 μm .

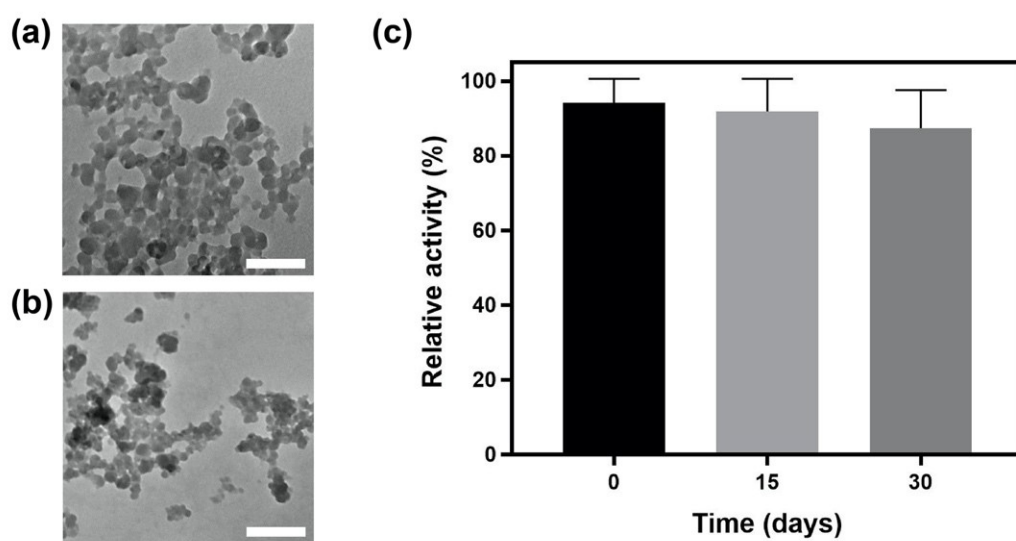


Figure S3. The structural change of SOD@ZIF-zni composites before (a) and after (b) the incubation at 25 °C for 30 days. Scale bar: 200 nm. (c) The relative activity of SOD@ZIF-zni composites during the period of 30 days.

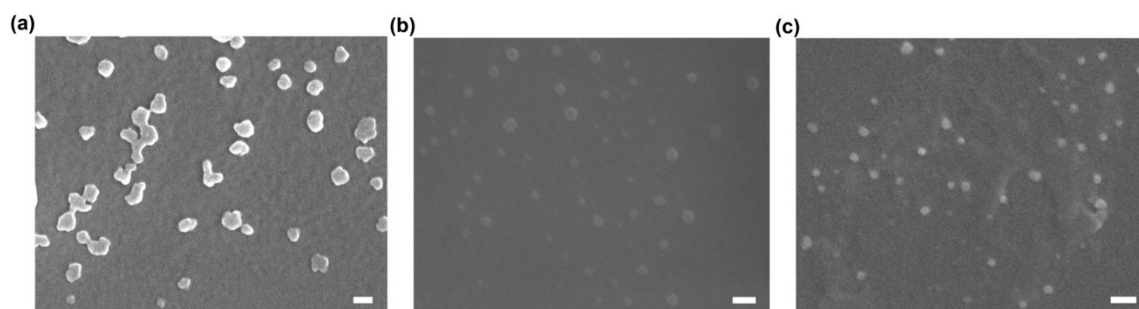


Figure S4. The morphology of SOD@ZIF-zni composites followed by the incubation at pH of 5.0 (a), 7.0 (b) and 9.0 (c) for 200 min. Scale bar: 100 nm.

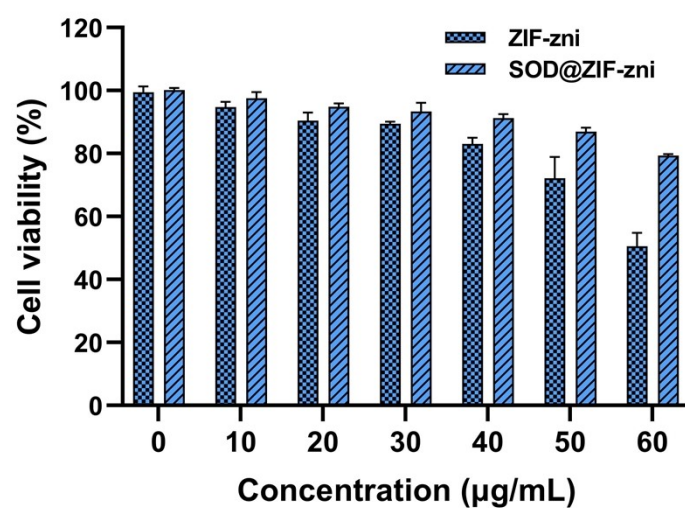


Figure S5. The cytotoxicity of ZIF-zni and SOD@ZIF-zni composites at various concentrations.

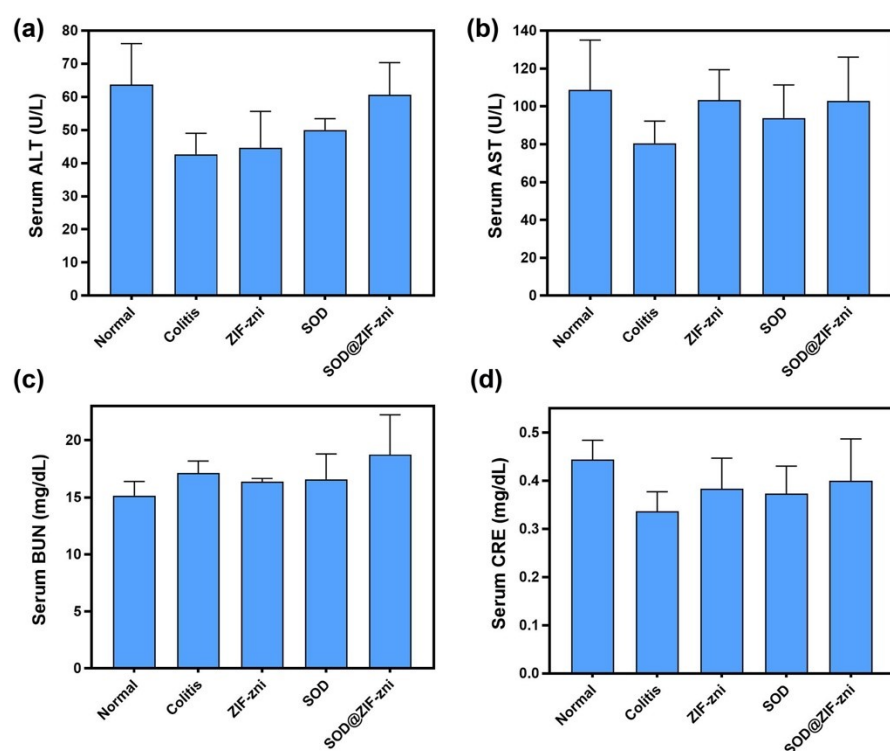


Figure S6. Biochemical parameters of ALT, AST, BUN and CRE in the serum of mice after different treatments for 7 days.

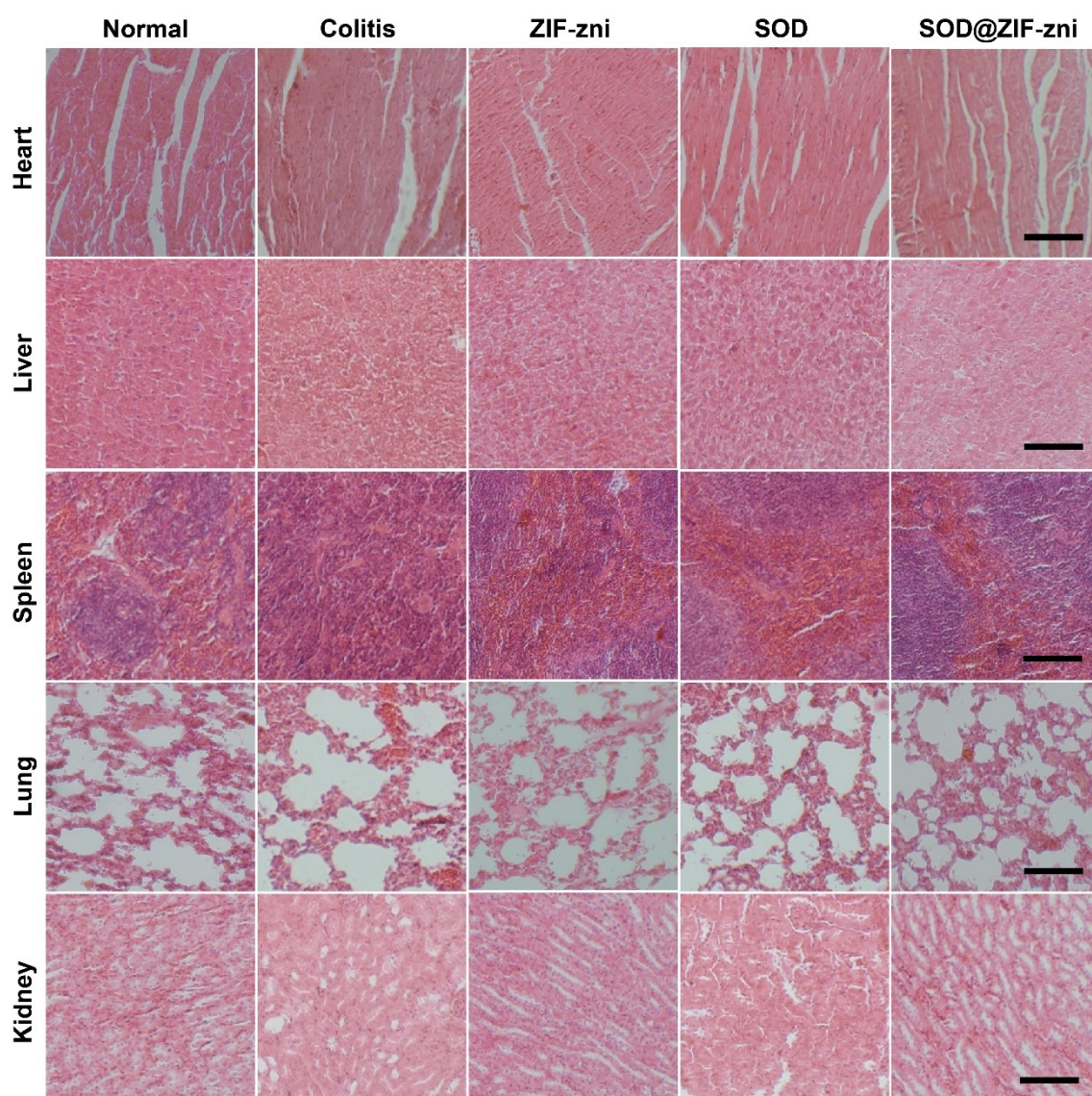


Figure S7. H&E staining images of heart, liver, spleen, lung and kidney of the mice after the oral administration with SOD@ZIF-zni composites for 7 days. Scale bar: 100 μ m.

Table S1. The sequences of primers used in the qPCR assay.

Primers	Sequence
Human β -actin forward	5'-AGTGTGACGTTGACATCCGT-3'
Human β -actin reverse	5'-GCAGCTCAGTAACAGTCCGC-3'
Human IL-6 forward	5'-AACGATGATGCACTTGCAGA-3'
Human IL-6 reverse	5'-GAGCATTGGAAATTGGGGTA-3'
Human IL-1 β forward	5'-TTGACGGACCCCAAAGATG-3'
Human IL-1 β reverse	5'-AGAAGGTGCTCATGTCCTCA-3'
Human TNF- α forward	5'-AAGCCTGTAGCCACGTCGTA-3'
Human TNF- α reverse	5'-AGGTACAACCCATCGGCTGG-3'
Mouse β -actin forward	5'-AGTGTGACGTTGACATCCGT-3'
Mouse β -actin reverse	5'-GCAGCTCAGTAACAGTCCGC-3'
Mouse IL-6 forward	5'-AACGATGATGCACTTGCAGA-3'
Mouse IL-6 reverse	5'-GAGCATTGGAAATTGGGGTA-3'
Mouse IL-1 β forward	5'-TTGACGGACCCCAAAGATG-3'
Mouse IL-1 β reverse	5'-AGAAGGTGCTCATGTCCTCA-3'
Mouse TNF- α forward	5'-AAGCCTGTAGCCACGTCGTA-3'
Mouse TNF- α reverse	5'-AGGTACAACCCATCGGCTGG-3'

Table S2. The scores of disease activity index (DAI).

Score	Weight loss (%)	Fecal blood	Stool consistency
0	None	None	Normal
1	1-5	Occult bleeding	Loose
2	5-10		
3	>10	Gross bleeding	Diarrhea

Table S3. The scores of histological evaluations.

Score	Inflammatory severity	Inflammatory site
0	Normal	None
1	Light	Mucosa
2	Moderate	Mucosa and submucosa
3	Severe	Transmural
4	Intense	-