Supplementary Information

Synthesis of EDTA-assisted $CeVO_4$ nanorods as a robust peroxidase mimic towards colorimetric detection of H_2O_2

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Table S1. Comparison of K_m and V_{max} between $CeVO_4$-2 NRs and HRP for H_2O_2 and TMB.

Catalyst	Substance	K_m (mM)	V_{max} (M/s)	Reference
$CeVO_4$-2 NRs	H_2O_2	0.157	8.53×10^{-8}	This work
$CeVO_4$-2 NRs	TMB	1.326	3.61×10^{-8}	This work
HRP	H_2O_2	0.214	2.46×10^{-8}	S1, S2
HRP	TMB	0.275	1.24×10^{-8}	S1, S2

Table S2. Comparison of mimetic enzyme activity in the linear range and detection limit of H_2O_2 between $CeVO_4$-2 NRs and other peroxidase mimics.

Mimetic enzyme	Linear range (μM)	Detection limit (μM)	Reference
$CeVO_4$-2 NRs	1~25	0.07	This work
$Fe_3H_9(PO_4)_6 \cdot 6H_2O$	57.4~525.8	1.0	S3
$CePO_4$	0~200	1.03	S4
MoS_2	5~100	1.5	S5
Fe_3O_4	5~100	3.0	S6
Co-Al LDH	10~50	10.0	S7
$AgVO_3$	75~200	5.0	S8

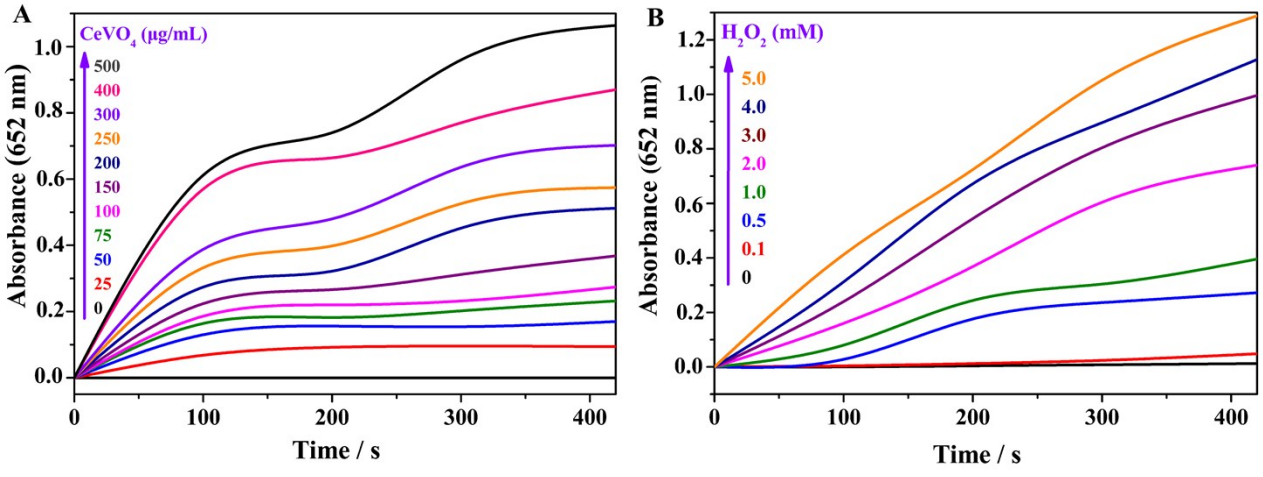

Fig. S1. Time-dependent absorbance at 652 nm of 0.8 mM TMB reaction solutions in the absence or presence of different concentrations of $CeVO_4$-2 (A) and different concentrations of H_2O_2 (B) in 20.0 mM PBS (pH = 4.0) at room temperature.

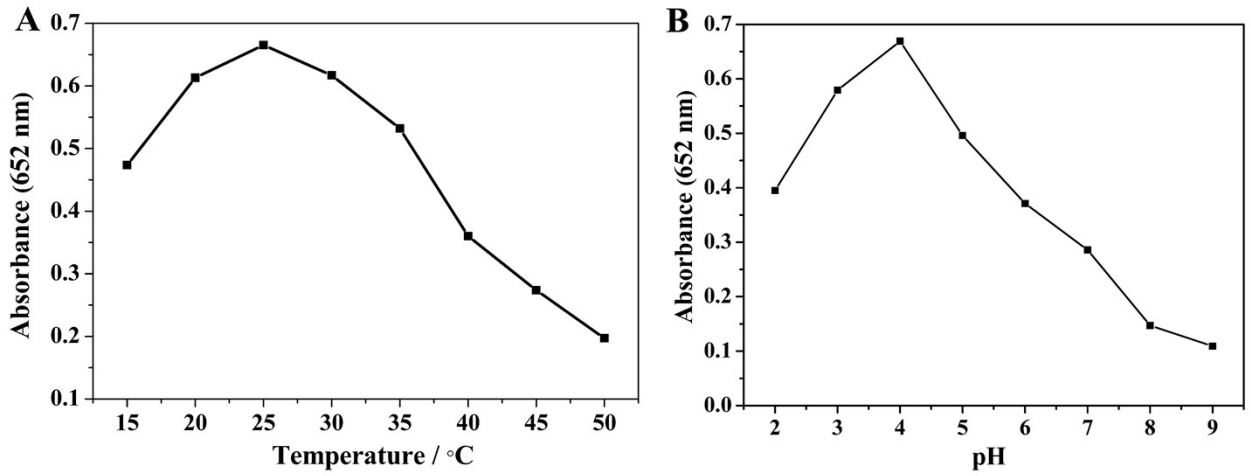

Fig. S2. Dependency of peroxidase mimetic activity of $CeVO_4$-2 on temperature (A) and pH (B). Experiments were conducted by using 300 μg/mL of $CeVO_4$-2 in 20.0 mM PBS (pH = 4.0) with 2.0 mM H_2O_2 and 0.8 mM TMB as substrates.

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