

Supporting Information

Chitosan-Stabilized Platinum Nanoparticles as Effective Oxidase Mimics for Colorimetric Detection of Acid Phosphatase

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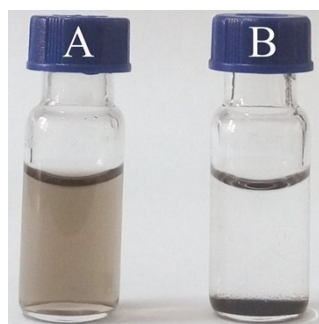


Fig. S1 Photographs of (A) Ch-PtNPs and (B) bare PtNPs placed at room temperature for 7 days.

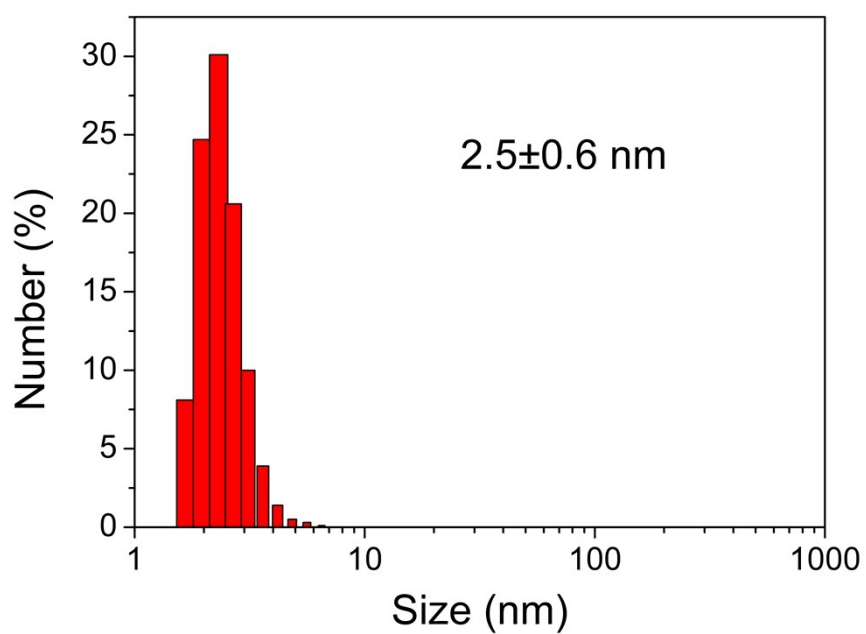


Fig. S2 Dynamic light scattering spectrum of Ch-PtNPs.

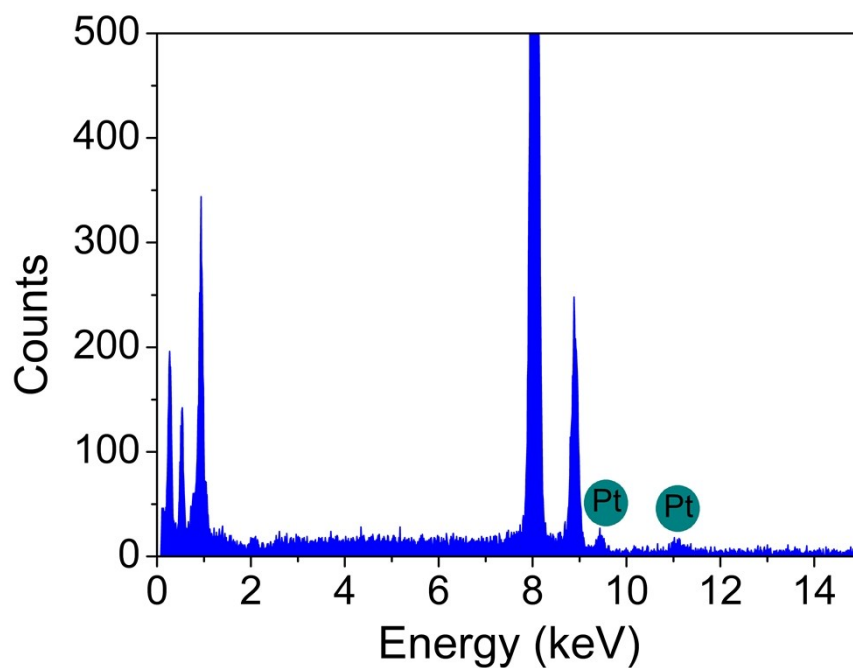


Fig. S3 EDS spectrum of Ch-PtNPs sample.

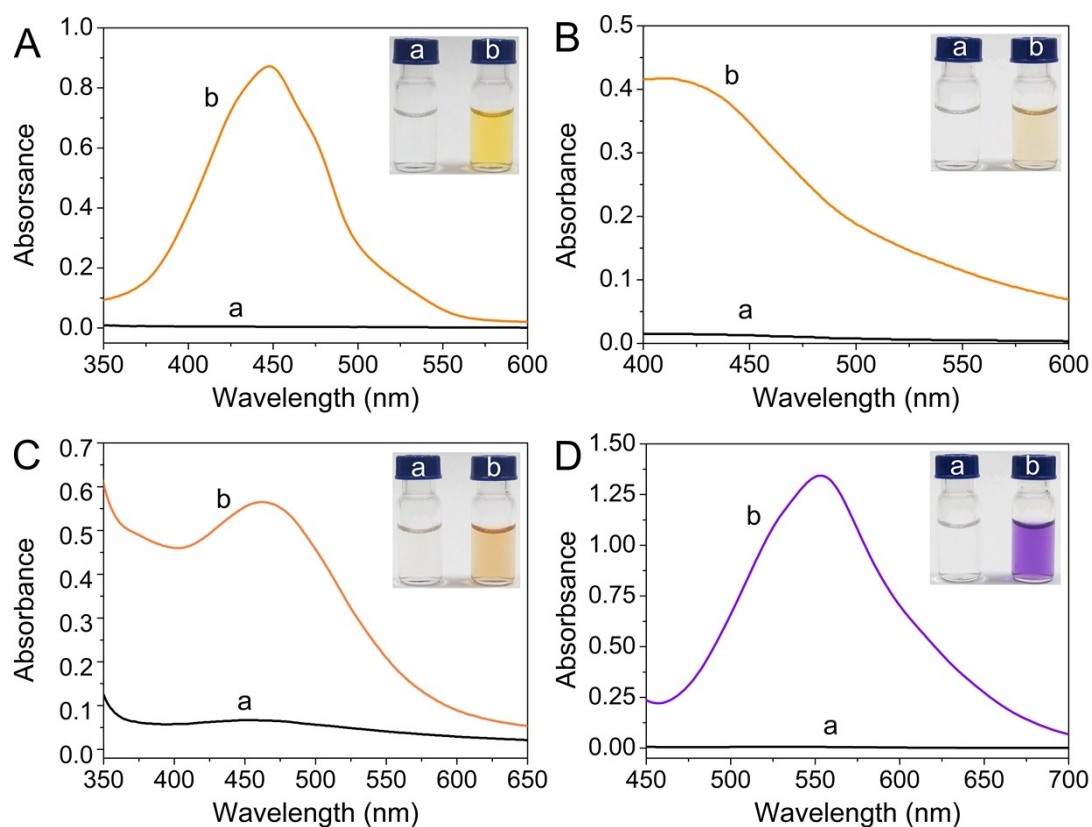


Fig. S4 UV-vis spectra of (A) OPD, (B) pyrogallol, (C) DAB, and (D) 4-AAP/TOPS catalyzed by Ch-PtNPs: (a) substrate only, (b) substrate + Ch-PtNPs. Inset: the corresponding photographs.

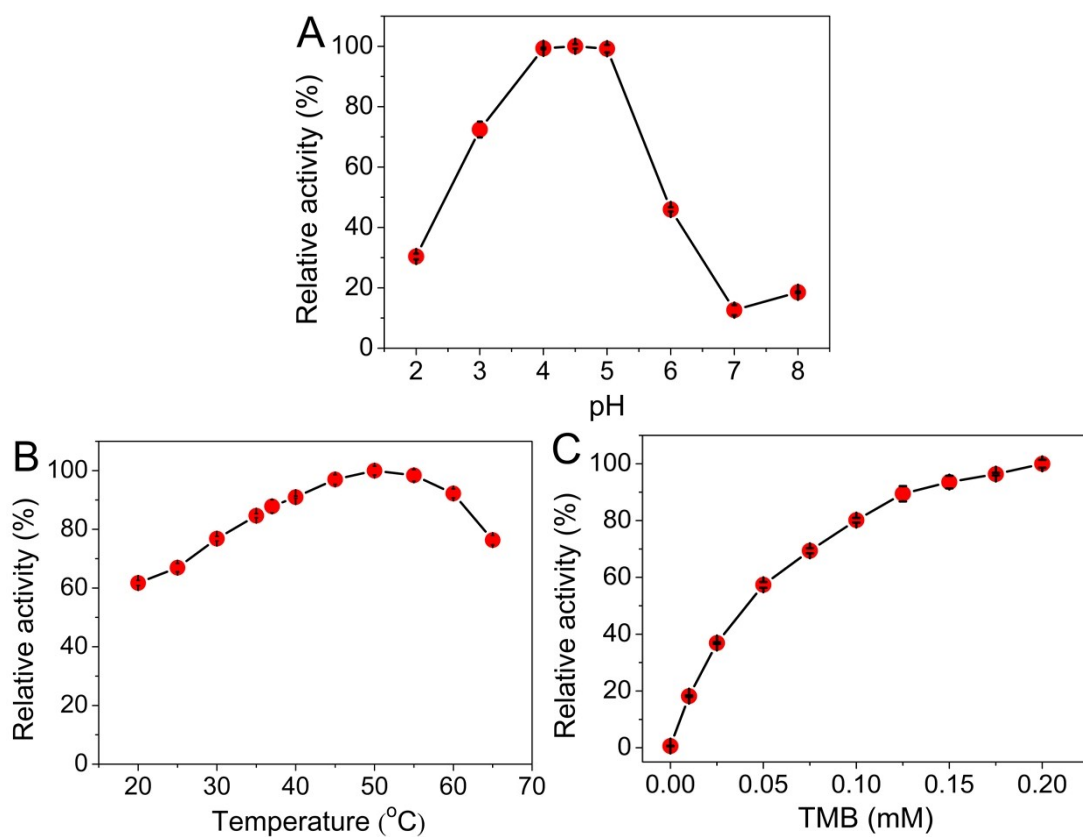


Fig. S5 Dependency of the relative activity of Ch-PtNPs toward oxidation on (A) pH, (B) temperature, and (C) concentration of TMB.

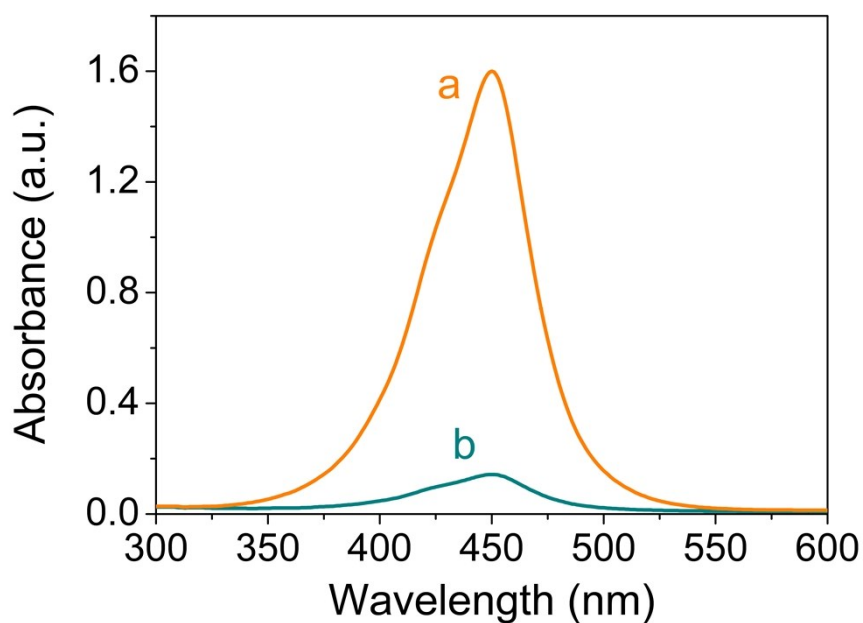


Fig. S6 Absorption spectra of a solution containing TMB and Ch-PtNPs under (a) aerobic and (b) N₂-saturated conditions.

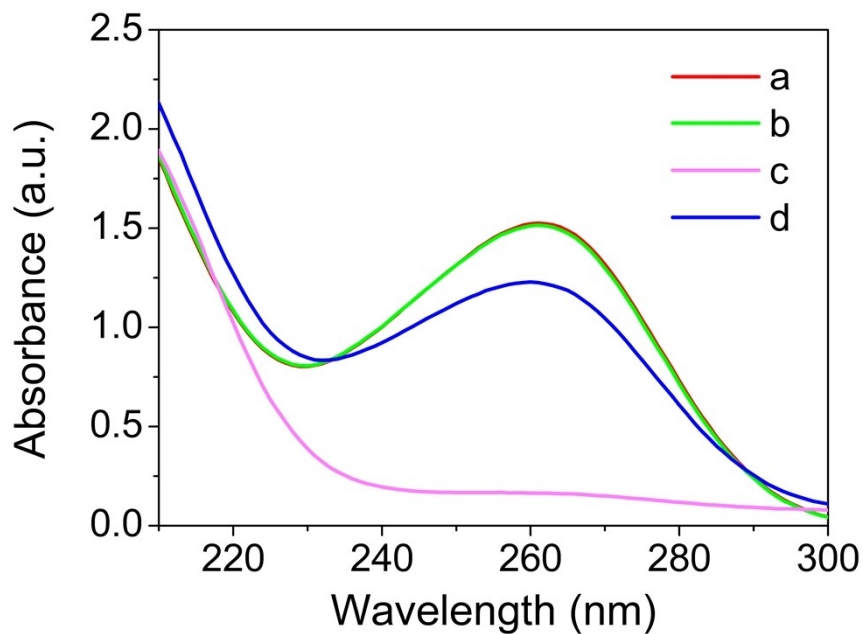


Fig. S7 Absorption spectra of AA under (a) aerobic and (b) N₂-saturated conditions and AA + Ch-PtNPs under (c) aerobic and (d) N₂-saturated conditions. The incubation times were all 3 min.

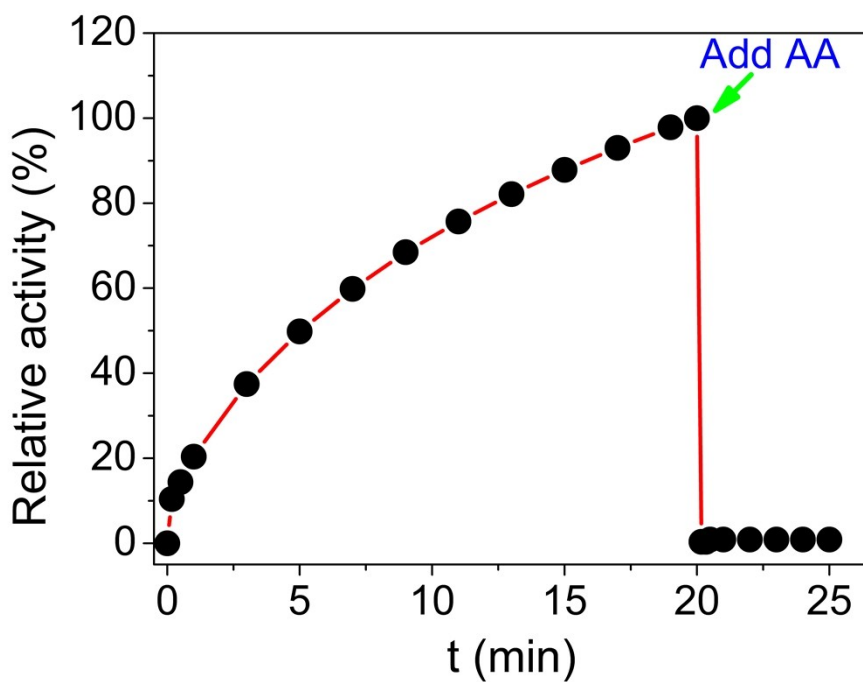


Fig. S8 Time-dependent absorbance for Ch-PtNPs-catalyzed TMB oxidation and AA-mediated reducing of oxidized TMB.

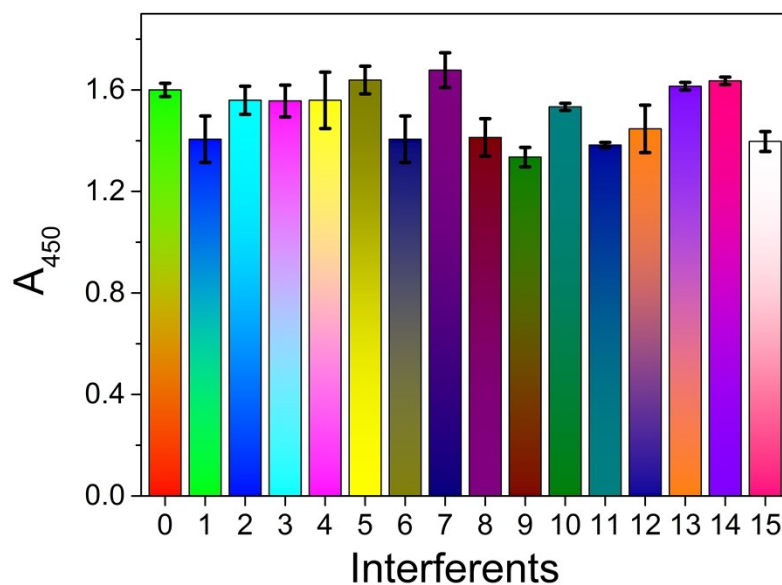


Fig. S9 Selectivity of the proposed method for ACP detection. X-axis labels correspond to (0) blank, (1) Cl^- , (2) H_2PO_4^- , (3) HCO_3^- , (4) NO_3^- , (5) SO_4^{2-} , (6) Na^+ , (7) Mg^{2+} , (8) K^+ , (9) Ca^{2+} , (10) Zn^{2+} , (11) creatinine, (12) creatine, (13) glucose, (14) lactose, and (15) acetylcholine. The concentrations of creatinine and creatine were 0.1 mM, and the others were 1 mM.