Supporting Information

One-pot synthesized Cu/Au/Pt trimetallic nanoparticles as a novel enzyme mimic

for biosensing applications

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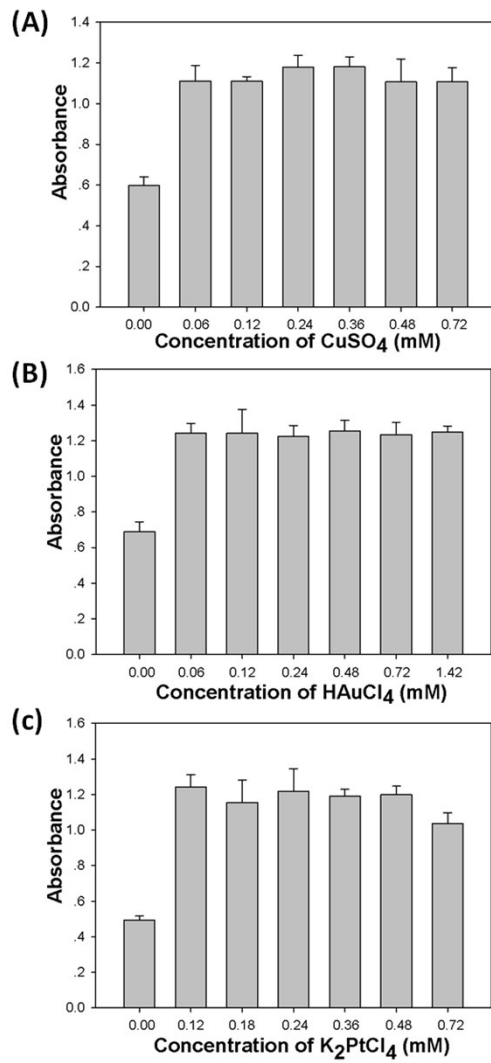
Fig. S1 The effects of the contents of (A) CuSO$_4$, (B) HAuCl$_4$ and (C) K$_2$PtCl$_4$ on the properties of Cu/Au/Pt TNPs.
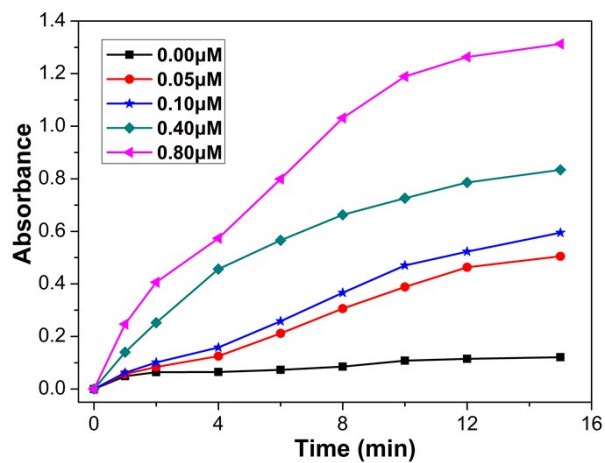
Fig. S2 The concentration dependence of H_2O_2 in the presence of Cu/Au/Pt TNPs.
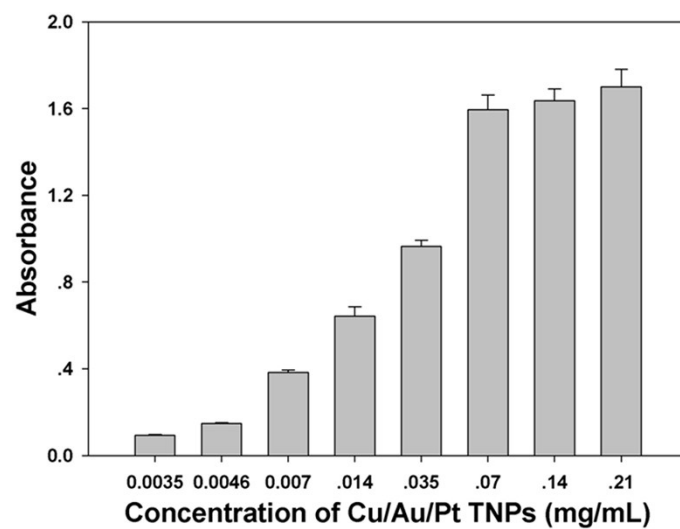
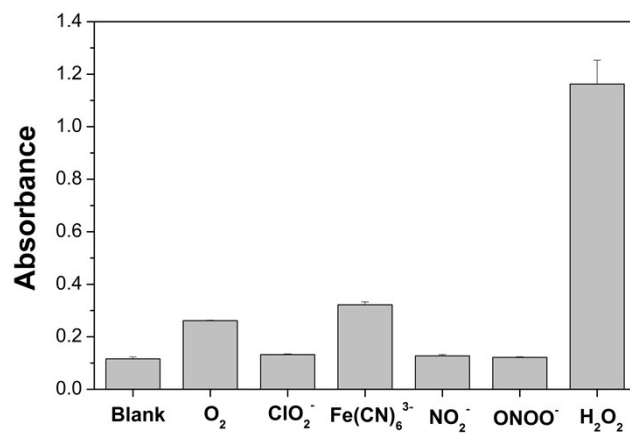**Fig. S3** The optimization of different concentrations of Cu/Au/Pt TNPs for TMB-H$_2$O$_2$ reaction.

Fig. S4 Absorption at 650 nm of different substrate (dissolved O_2, ClO^-, $Fe(CN)_6^{3-}$, NO_2^-, $ONOO^-$ and H_2O_2) in the presence of the same amount of TMB and Cu/Au/Pt TNPs.

Table S1 Performance comparison of the proposed Cu/Au/Pt TNPs with other H_2O_2 sensors

Enzyme mimics	Linear range	LOD	Ref.
H-MOFs	0-800 μM	1.0 μM	[1]
glycine-MIL-53(Fe)	0.10-10 μM	0.049 μM	[2]
Fe_3O_4/graphene	0.8-334.4	0.078 μM	[3]
Au/Pt NRs	1-250 μM	0.04 μM	[4]
Au-Ag/C NC	0.8-90 μM 90-500 μM	0.3 μM	[5]
Pt-Au/reduced graphene sheets	1–1780 1780–16800 μM	0.31 μM	[6]
Cu-SBA-15	0.8 - 60 mM	3.7 μM	[7]
$Ni(OH)_2$/RGO/Cu_2O	0.5 -7.5 mM	0.20 μM	[8]
Cu/Au/Pt TNPs	0-1000 nM	0.017 μM	This work

References

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