Supporting for

Cu@Au(Ag)/Pt nanocomposite as peroxidase mimic and application

of Cu@Au/Pt in colorimetric detection of glucose and L-cysteine

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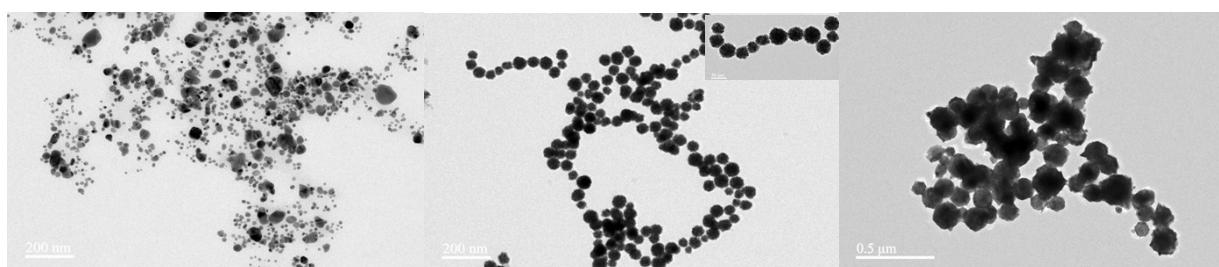*Corresponding author Email: wangw@ycit.edu.cn, ycitwangw@163.com*

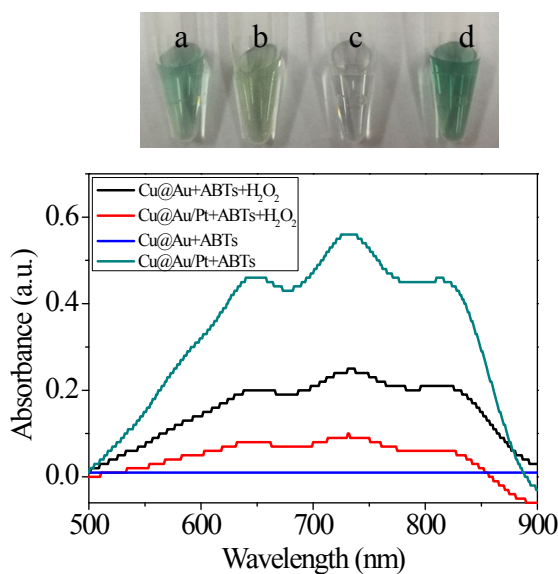Figure S1. TEM images of Cu@Ag ,Cu@Ag/Pt and Cu@Ag/Pd nanoparticles

Figure S2. Photo images and uv-vis absorption spectra for (a) Cu@Au+ABTs+H_2O_2 (b) Cu@Au/Pt+ABTs+H_2O_2 (c) Cu@Au+ABTs (d) Cu@Au/Pt+ABTs
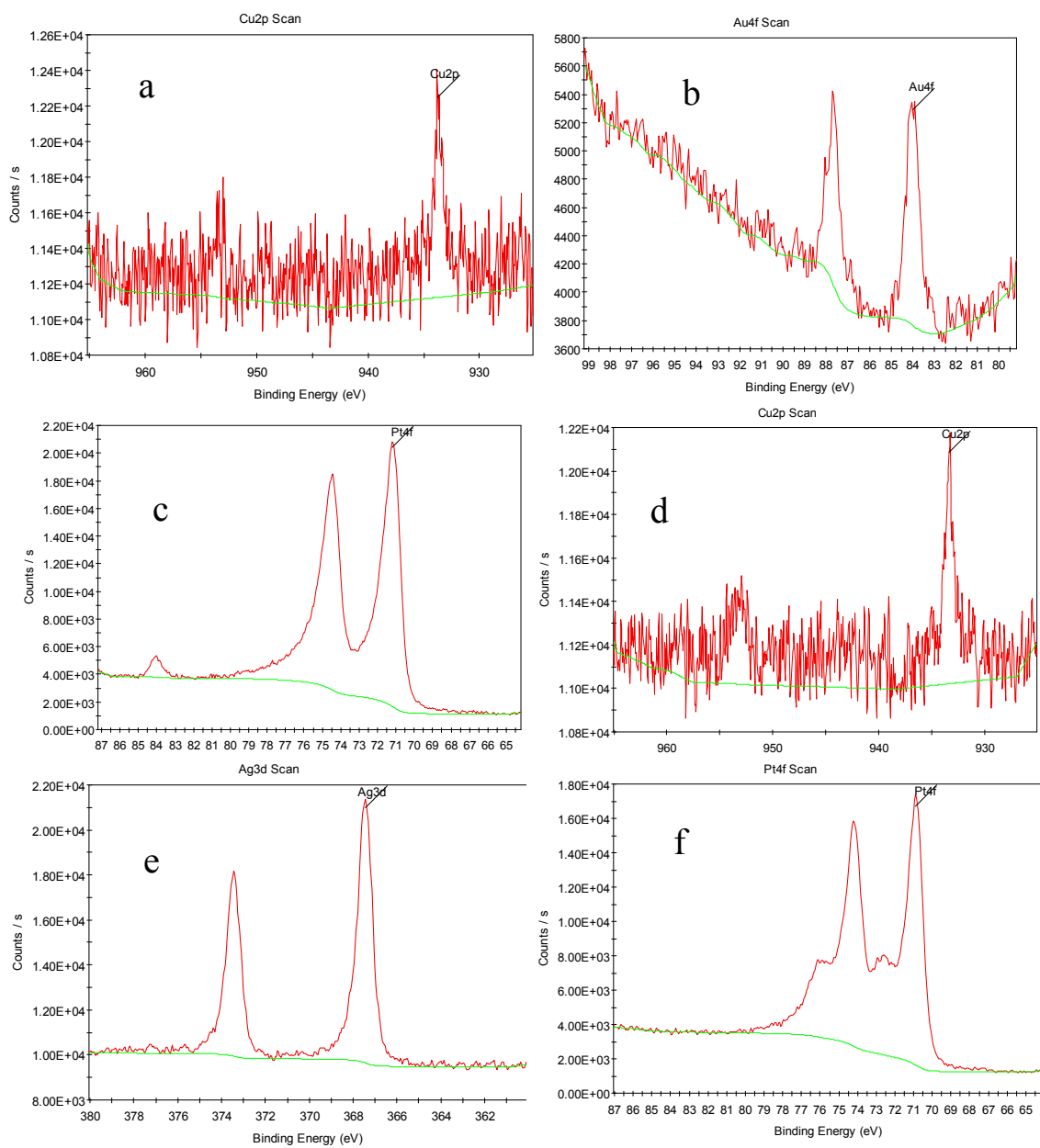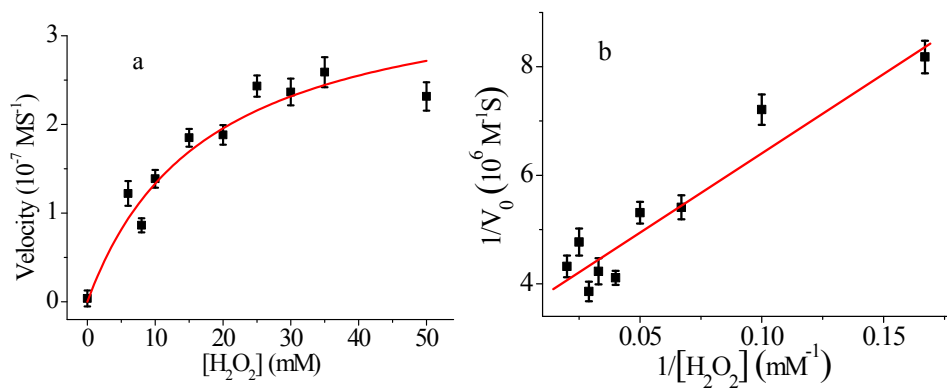
Figure S3. XPS spectra of Cu@Au/Pt (a) Cu_{2p} (b)Au_{4f} (c)Pt_{4f} and Cu@Ag/Pt (d) Cu_{2p} (e)Ag_{3d} (f)Pt_{4f}
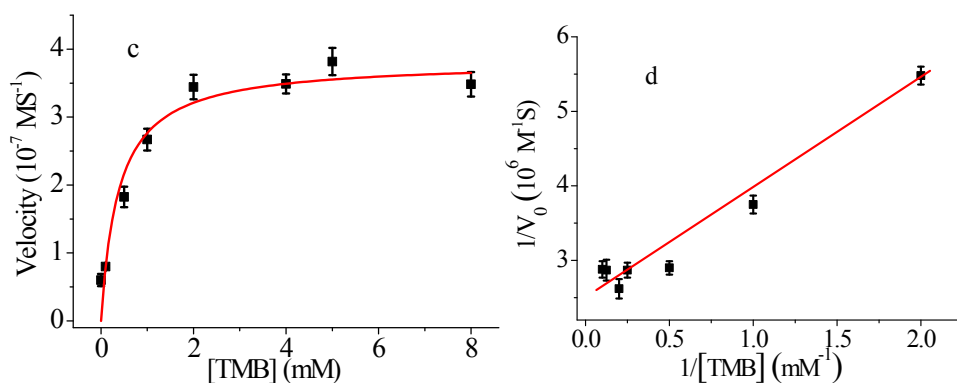
Figure S4. Steady-state kinetic assays of the R-Cu@Ag/Pt. (a) varying H_2O_2 concentration with fixed TMB concentration (5 mM). (c) varying TMB concentration with fixed H_2O_2 concentration (30 mM). (b, d) Lineweaver-Burk plots of the double reciprocal of the Michaelis-Menten equation.
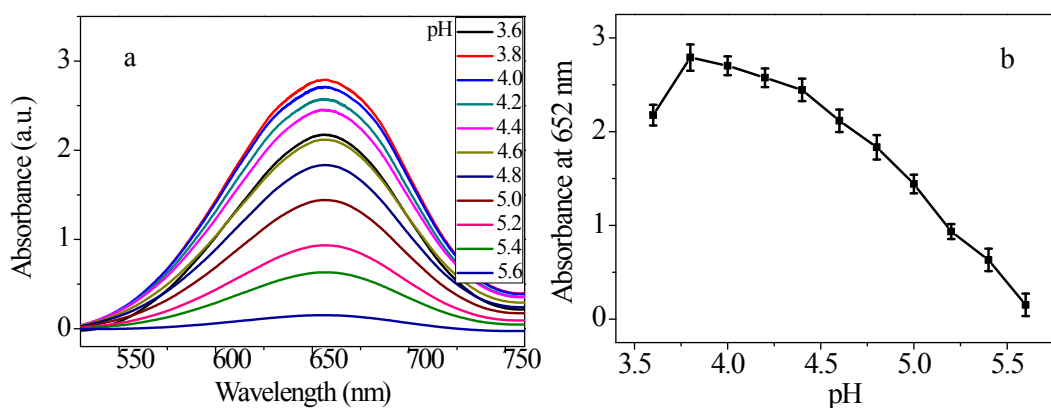

Figure S5. (a) Absorbance spectra of Cu@Au/Pt+TMB+H_2O_2 in acetate buffer with different pH (b) Absorbance at 652 nm *vs* pH .
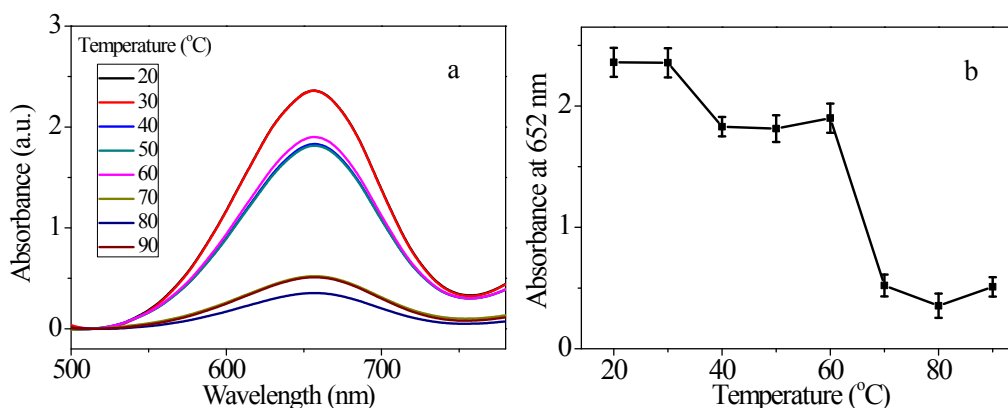

Figure S6. (a) Absorbance spectra of Cu@Au/Pt+TMB+H_2O_2 under different temperature and (b) ΔA_{652nm} *vs* Temperature.
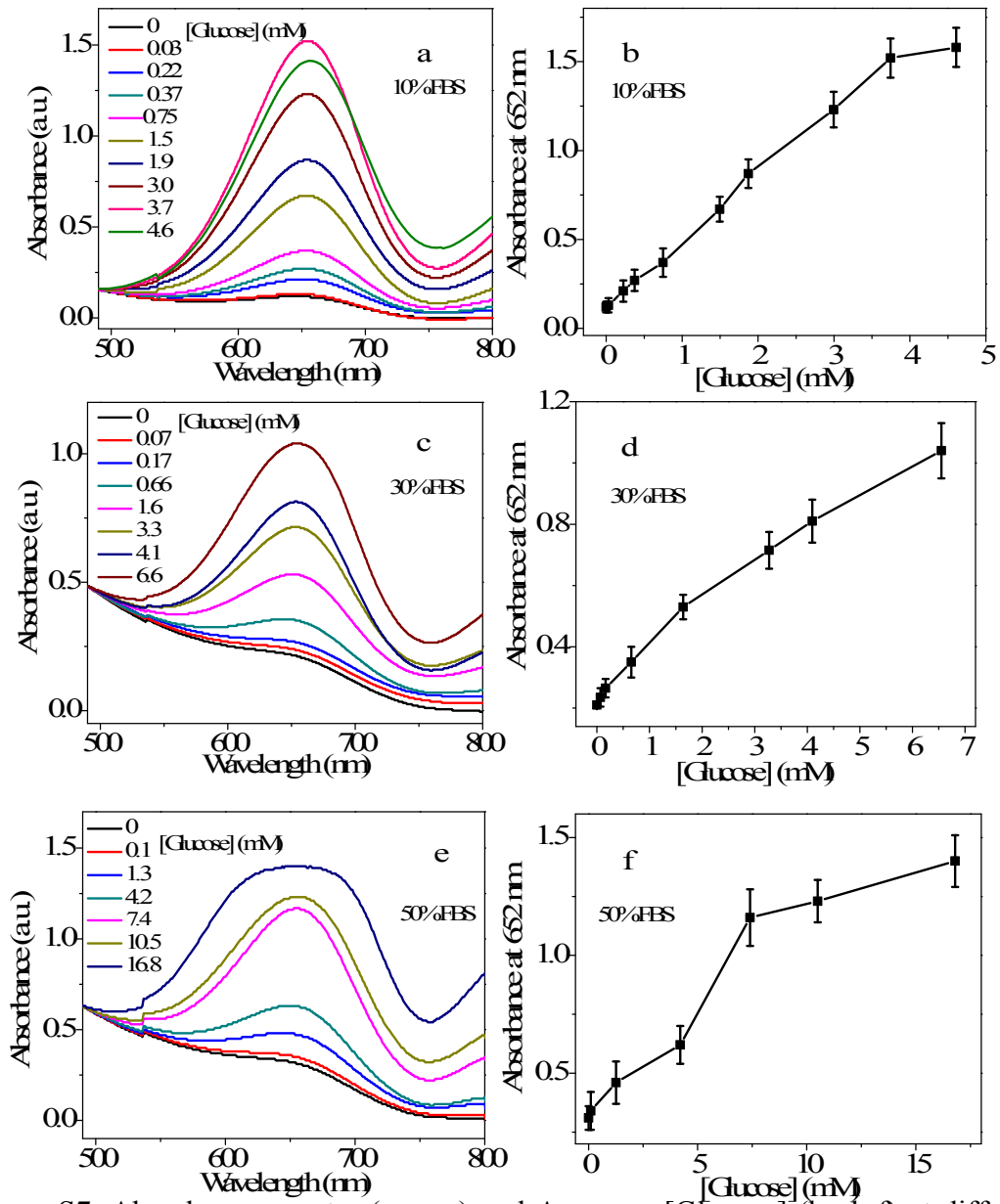
Figure S7. Absorbance spectra (a, c, e) and A_{652nm} *vs* [Glucose] (b, d, f) at different volume ratio (percentage) of serum (a, b) 10%, (c, d) 30%, (e, f) 50%

Table S1. Summarization of glucose LOD in serum with different volume ratios

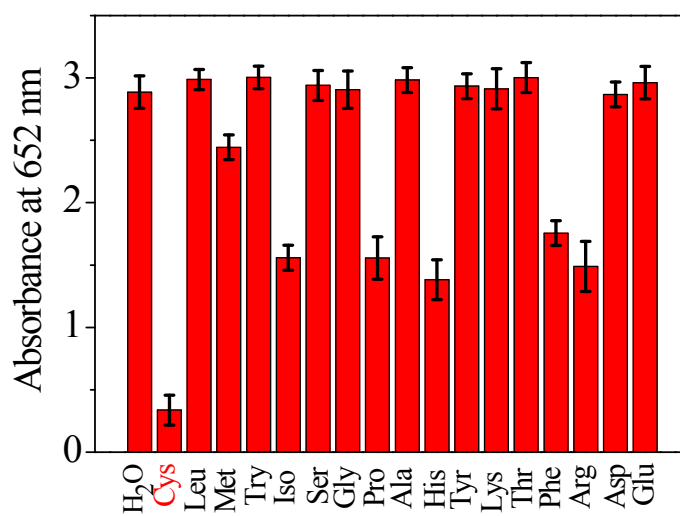| Serum Ratio	LOD (μM)
0	6
10%	15
30%	50
50%	80

Figure S8. Absorbance intensity at 652 nm in the presence of 2.5 mM various amino acids

Table S2. Recovery measurements of cysteine in tap water

Analytes	Spiked (μM)	Found (μM)	Recovery (%)
cysteine	0.1	0.098	98
	1	1.16	116
	2	2.16	108