

Electronic Supporting Information

for

One-pot preparation of dextran-capped gold nanoparticles at room temperature and colorimetric detection of dihydralazine sulfate in uric samples

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Preparation of citrate- and CTAB-capped AuNPs

Citrate-capped AuNPs were prepared by citrate-reduced method. In detail, 48.0 mL of Milli-Q purified water and 2.0 mL of 1.0% (w/w) HAuCl₄ were mixed in a flask. The mixture was then heated under magnetic stirring until it began to boil, and 1.0 mL of 5.0% (w/w) trisodium citrate was quickly added to the solution, which should change from pale yellow to deep red with about 3 min. After boiling for another 5 min, the solution was cooled to room temperature (25 °C) under vigorous magnetic stirring.

CTAB-capped Au-NPs were synthesized by seed-mediated method with two-step procedures. Firstly, 5.0 mL solution of gold seeds was prepared in manner of reducing $2.5 \times 10^{-4} \text{ mol}\cdot\text{L}^{-1}$ HAuCl₄ with freshly prepared $3.0 \times 10^{-3} \text{ mol}\cdot\text{L}^{-1}$ ice-cold NaBH₄ in the

presence of $7.5 \times 10^{-2} \text{ mol}\cdot\text{L}^{-1}$ CTAB. After mixed vigorously for about 30 s, the mixture rapidly developed into light-brown suspension. This mixture could be used as seeds for further synthesis of Au-NPs after 2 h aging. Secondly, 10.0 mL growth solution was prepared by the reduction of $2.0 \times 10^{-4} \text{ mol}\cdot\text{L}^{-1}$ HAuCl_4 with freshly prepared $6.0 \times 10^{-3} \text{ mol}\cdot\text{L}^{-1}$ L-AA in the presence of $1.6 \times 10^{-3} \text{ mol}\cdot\text{L}^{-1}$ CTAB and gently mixed by inversion, with the colour changing from orange to colourless immediately, then followed by adding 2 h-aged gold seed solution prepared in the first step, inverted once more, and then the color of mixture became red gradually. At last, the mixture was left undisturbed for 24 h.

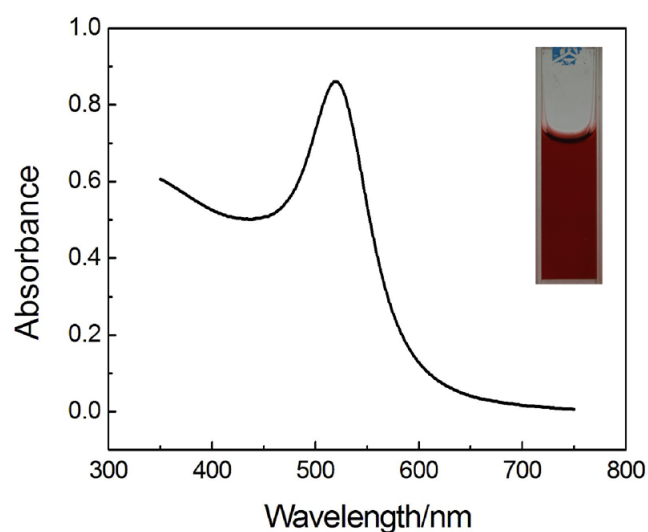


Fig. S1 UV-vis absorption spectra and solution color of dextran-capped AuNPs.

Table S1 Tolerance of foreign substances

Substance	Concentration ($\mu\text{mol}\cdot\text{L}^{-1}$)	Change in A_{650}/A_{520} (%)	Substance	Concentration ($\mu\text{mol}\cdot\text{L}^{-1}$)	Change in A_{650}/A_{520} (%)
Glucose	400	5.5	Carbamide	400	2.3
Sucrose	400	4.4	Isoniazid	400	0.7
Lactose	400	-1.8	Hydrazine sulfate	400	-2.3
Maltose	400	-6.3	Vitamin b12	400	-1.8
Fructose	200	-9.3	K^+ , Cl^-	400	-5.0
Glycin	400	-6.2	Na^+ , PO_4^{3-}	400	2.5
L-Glutamic acid	400	-2.2	Mg^{2+} , Cl^-	80	7.6
L-Serine	400	-6.2	Ca^{2+} , Cl^-	80	5.6
L-Arginine	40	-6.3	Zn^{2+} , SO_4^{2-}	40	3.1
Citric acid	400	8.2	Cu^{2+} , SO_4^{2-}	20	-9.6
Oxalic acid	400	1.1	Al^{3+} , SO_4^{2-}	80	9.6

Concentrations: AuNPs, $2.5 \text{ nmol}\cdot\text{L}^{-1}$; DHZS, $4.0 \mu\text{mol}\cdot\text{L}^{-1}$; NaCl, $90 \text{ mmol}\cdot\text{L}^{-1}$; pH, 8.6.