Supporting Information for:

Colorimetric Sensor for Detecting Thiourea Based on Inhibiting Peroxidase-like Activity of Gold-platinum Nanoparticles

Yuqi Zhao[1], Qingjie Fu[1], Xiaoqian Cui[2], Hui Chi[1], Yongzhuang Lu[1], Xiaoli Liu[1], Miao Yu[1],

Qiang Fei[1], Guodong Feng[1], Hongyan Shan[1], and Yanfu Huan[1*]

1. College of Chemistry, Jilin University, Changchun 130023, People's Republic of China

2. Department of Emergency and Critical Care, the Second Hospital of Jilin University, Changchun 130041,

People's Republic of China

*. Corresponding author: E-mail address: yfhuan@jlu.edu.cn

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† To whom correspondence should be addressed.

E-mail: yfhuan@jlu.edu.cn

Table S1 Sources of other reagents

| Reagent	Source
Potassium hexachloroplatinate (IV)	Aladdin Industrial Corporation
Ascorbic acid	Beijing Chemical Works
3,3',5,5'-Tetramethylbenzidine dihydrochloride	Shanghai Aladdin Biochemical Technonlgy Co., Ltd.
Hydrogen peroxide	Beijing Chemical Works
Citric acid	Shenyang Xinxing Reagent Factory
Sodium citrate	Tianjin Guangfu Fine Chemical Research Institute
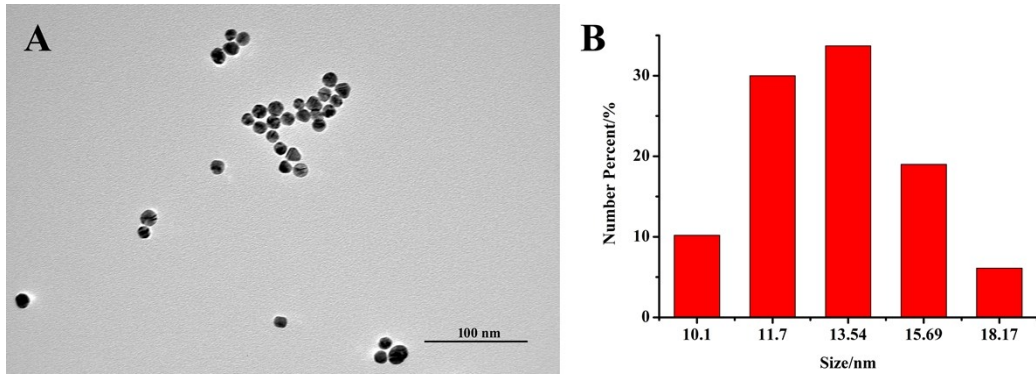
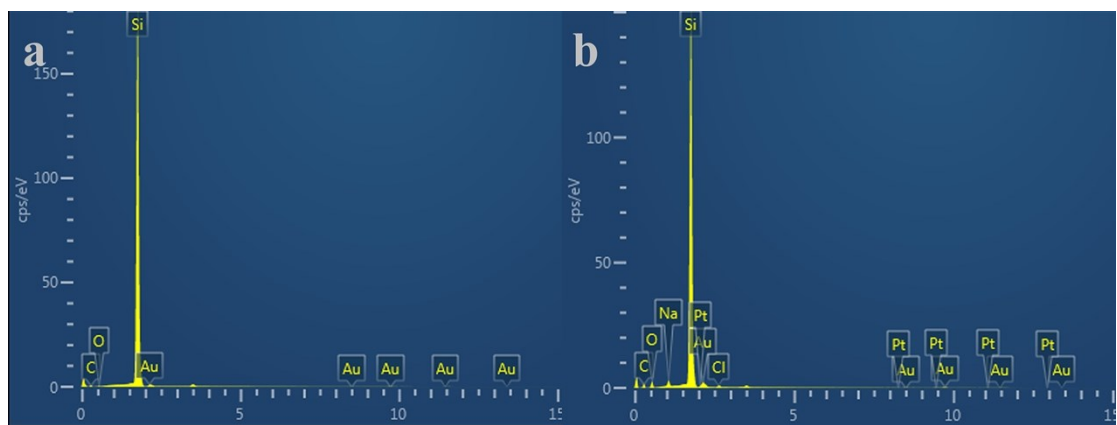Fig. S1 TEM (A) and DLS (B) characterizations of AuNPs.

Fig. S2 Energy dispersive X-ray spectroscopy (EDX) characterization of AuNPs (a)
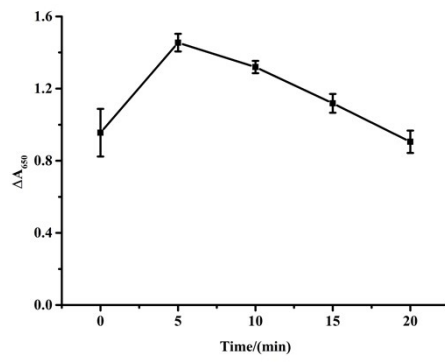and Au@PtNPs (b).

Fig. S3 Reaction time of the sensor for detecting TU

Calculation of the limit of detection

The limit of detection (LOD) of the colorimetric sensor is 9.57 nmol L^{-1}. The calculation process is as follows. First, the blank sample is used to make 11 sets of data in parallel, and the standard deviation of these data is obtained. The standard deviation measured experimentally is 0.0075. Finally, according to the calculation formula of the detection limit:

$y = (3S_b + 0.859)/0.445 = (3 \times 0.0075 + 0.859)/0.445 = 1.981$

$LOD = 10^y = 95.7 \times 10^{-10}$ mol L^{-1} = 9.57 nmol L^{-1}

S_b stands for the standard deviation.

Therefore, the LOD of SCN$^-$ based on gold nanoparticle colorimetric sensor is 9.57 nmol L^{-1}.

Table S2 Comparison with other sensors for TU detection

No.	Probe	Linear range/(mol L^{-1})	LOD/(mol L^{-1})	Time/(min)	Ref.
1	Citrate/AgNPs	2.00×10^{-9}-2.00×10^{-8}	8.00×10^{-10}	immediate	5
2	Citrate/AuNPs	5.00×10^{-9}-3.50×10^{-7}	2.14×10^{-9}	45	6
3	Fluorescein/AuNPs	5.00×10^{-8}-3.00×10^{-6}	2.30×10^{-8}	3	8
4	Fluorescence	9.00×10^{-7}-1.00×10^{-6}	1.50×10^{-7}	--	4
5	Au@PtNPs	1.00×10^{-8}-1.00×10^{-5}	9.57×10^{-9}	5	This work