

## Supplemental Material

### **Detection of thiocyanate through limiting growth of AuNPs with C-dots act as reductant**

Qiuju Lu, Yalan Liu, Yuxin Hou, Haiyan Wang, Youyu Zhang\* and Shouzhao Yao

*Key Laboratory of Chemical Biology and Traditional Chinese Medicine Research (Ministry of Education), College of Chemistry and Chemical Engineering, Hunan Normal University, Changsha 410081, PR China*

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\*Corresponding author. Tel: +86-731-8865515; fax: +86-731-8865515;  
E-mail address: zhangyy@hunnu.edu.cn

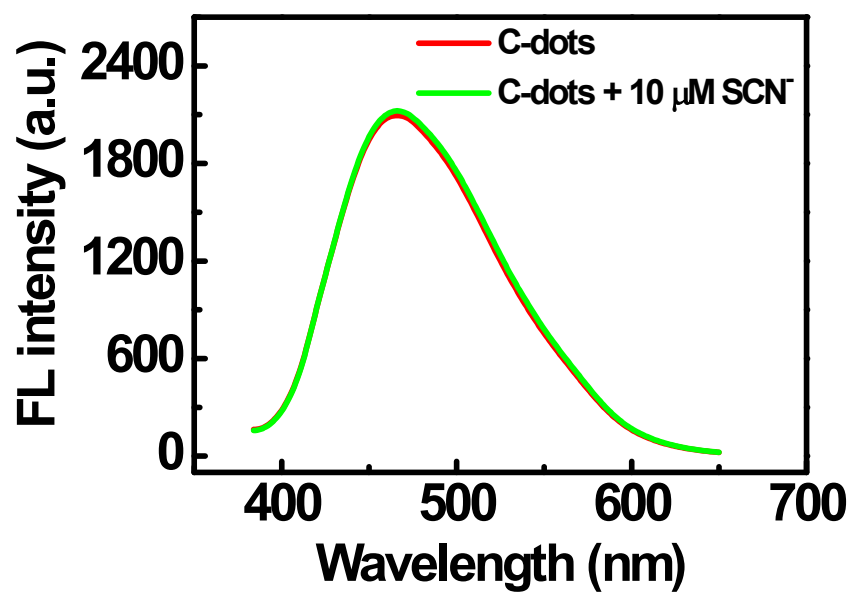


Fig. S1 Fluorescence spectra of C-dots and C-dots in the presence of 10  $\mu\text{M}$   $\text{SCN}^-$ .

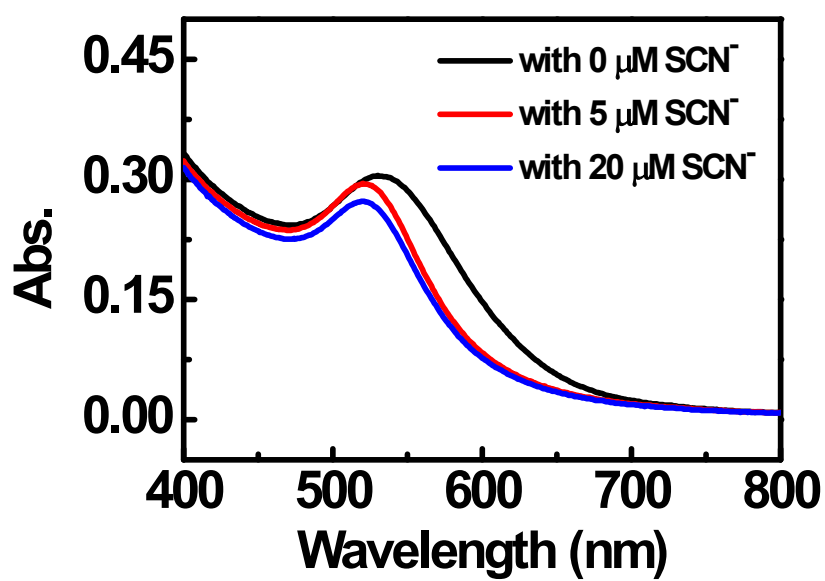


Fig. S2 UV-vis spectra of as-synthesized AuNPs after addition of different concentration of  $\text{SCN}^-$ .

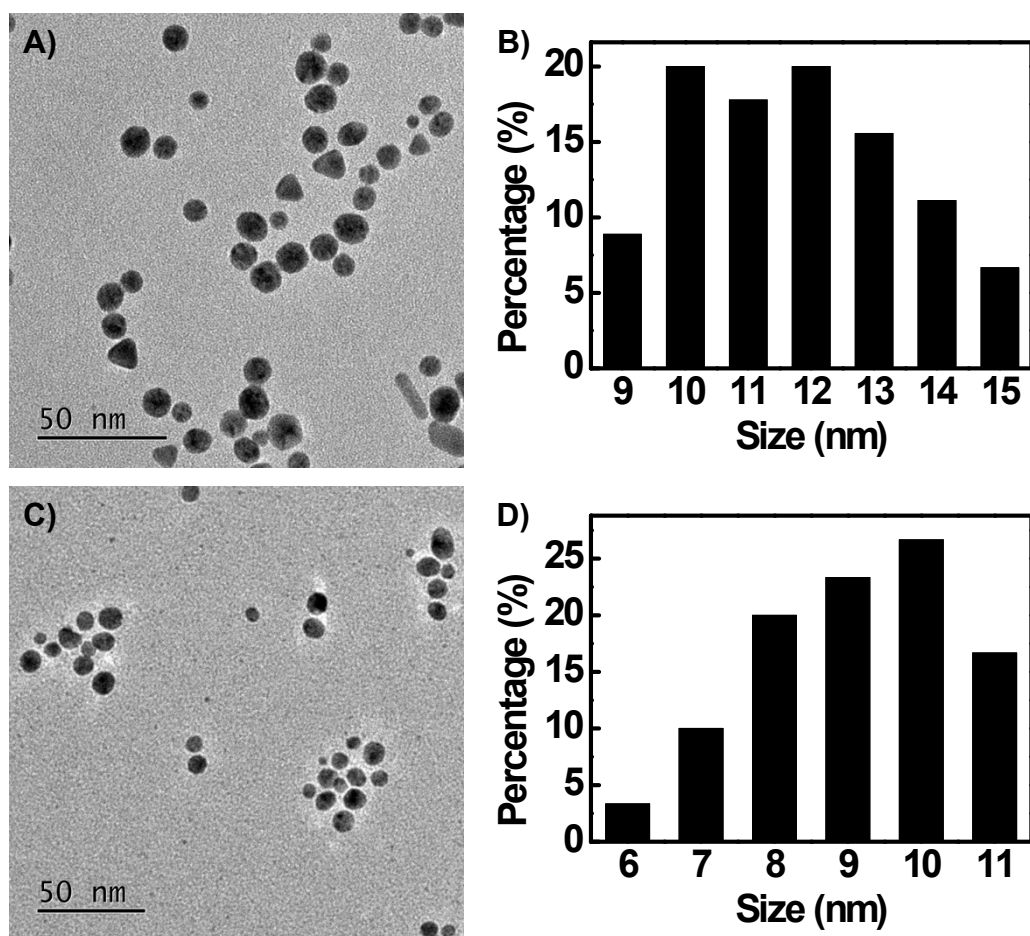


Fig. S3 (A, C) TEM images of as-synthesized AuNPs (A) in the absence and (C) presence of  $20 \mu\text{M} \text{SCN}^-$ . (B, D) Corresponding size distribution histograms.

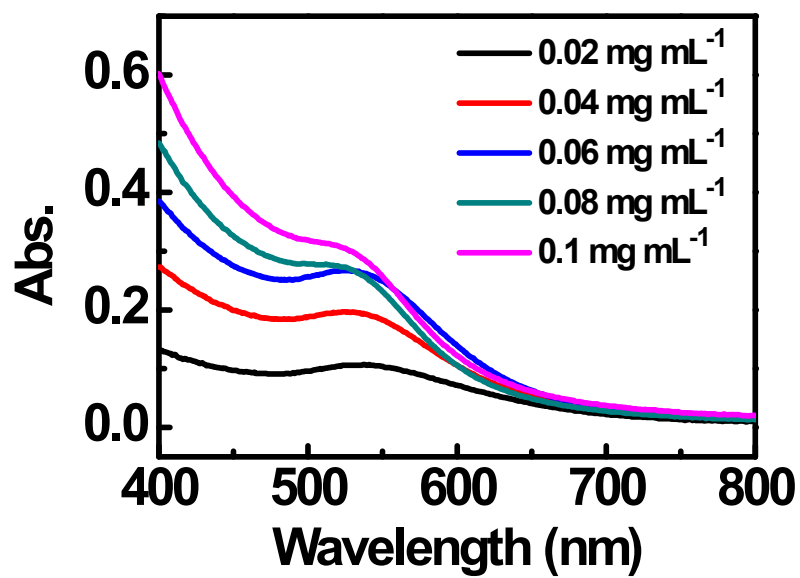


Fig. S4 UV-vis spectra of AuNPs synthesized from different concentration of C-dots. (the concentration of H<sub>2</sub>AuCl<sub>4</sub> is 0.05 mM, incubating time is 20 min at room temperature.)

Table S1 comparison of the proposed method with the other methods for SCN<sup>-</sup> analysis.

| Method           | Linear rang (μM) | LOD (μM) | Reference |
|------------------|------------------|----------|-----------|
| GC/MS            | 0.50-200         | 0.05     | 1         |
| GC/MS            | 5.0-200          | --       | 2         |
| HPLC/MS/MS       | 0.20-50          | 0.05     | 3         |
| Electrochemistry | 15.1-1090        | 8.7      | 4         |
| Electrophoresis  | 21.5-1290        | 13.7     | 5         |
| SERS             | 0.05-50          | 0.05     | 6         |
| Colorimetry      | 0.20-2.0         | 0.20     | 7         |
| Colorimetry      | 0.20-4.0         | 0.20     | 8         |
| Colorimetry      | 0.20-50          | 0.16     | This work |

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