Electronic Supporting Information

For

pH-dependent photoluminescence "switch-on" nanosensor composed of silver nanoparticles and nitrogen and sulphur co-doped carbon dots for discriminative detection of biothiols.

Feng Xiang, Jizhou Li and Zhongde Liu*

Key Laboratory of Luminescent and Real-Time Analytical Chemistry (Southwest University), Ministry of Education, College of Pharmaceutical Science, Southwest University, Chongqing 400716, China. Tel: +86-23-68251910. Fax: +86-23-68251048. E-mail: lzdzhy@swu.edu.cn.

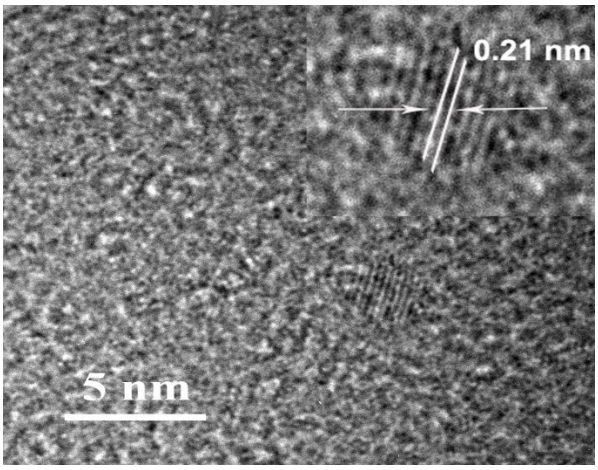

Fig.S1 HRTEM image of the as-prepared N, S-CDs, the inset showing representative lattice fringes.

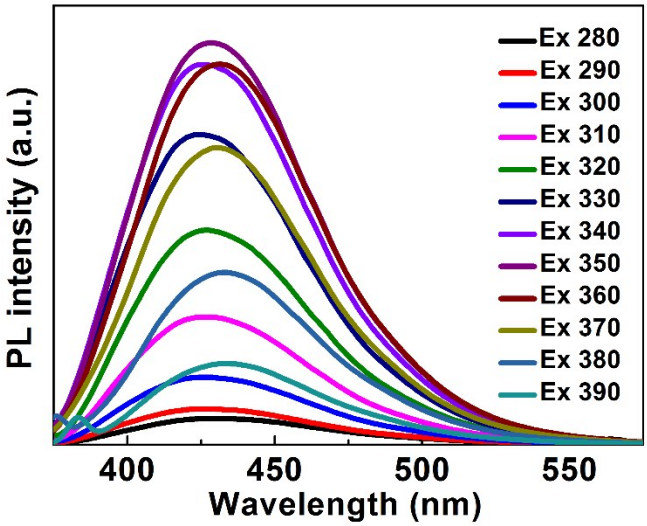

Fig.S2 PL spectra (recorded from 280 to 390 nm with 10 nm increment) of the N, S-CDs.

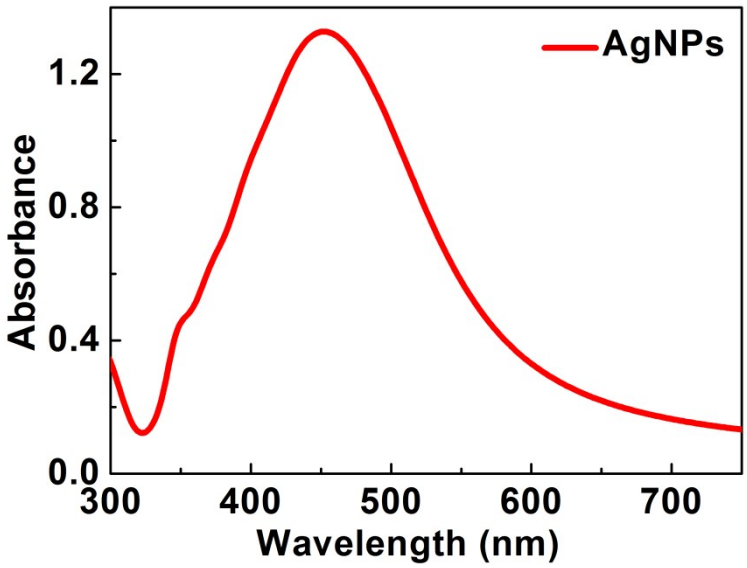

Fig.S3 The extinction spectra of the as-prepared AgNPs.

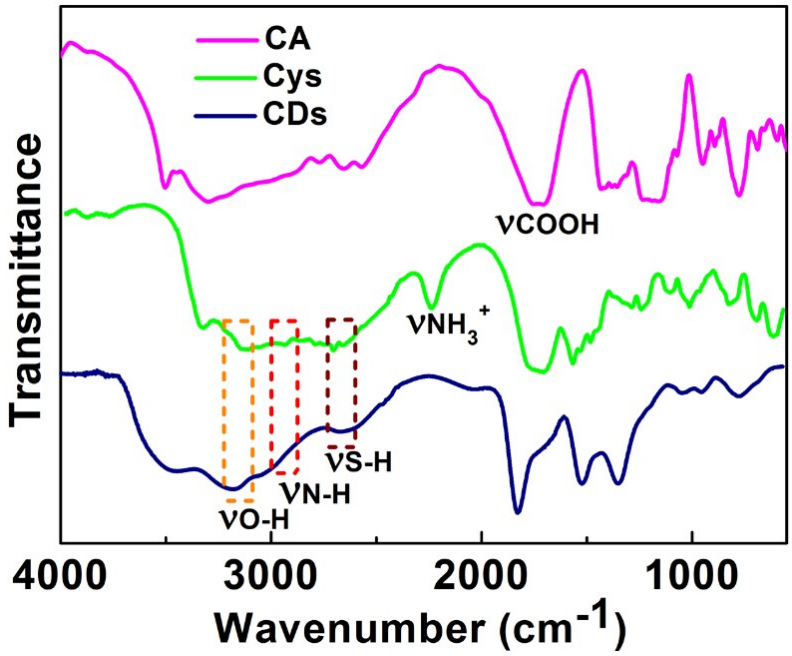

Fig. S4 FT-IR spectra of citric acid (CA), L-cysteine (Cys) and the obtained N, S-CDs.

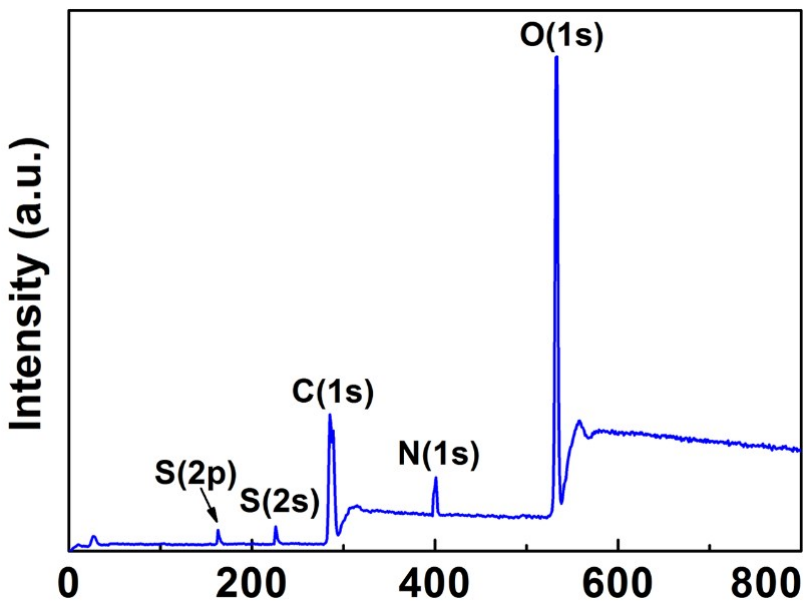

Fig. S5 The XPS survey scan of the N, S-CDs.

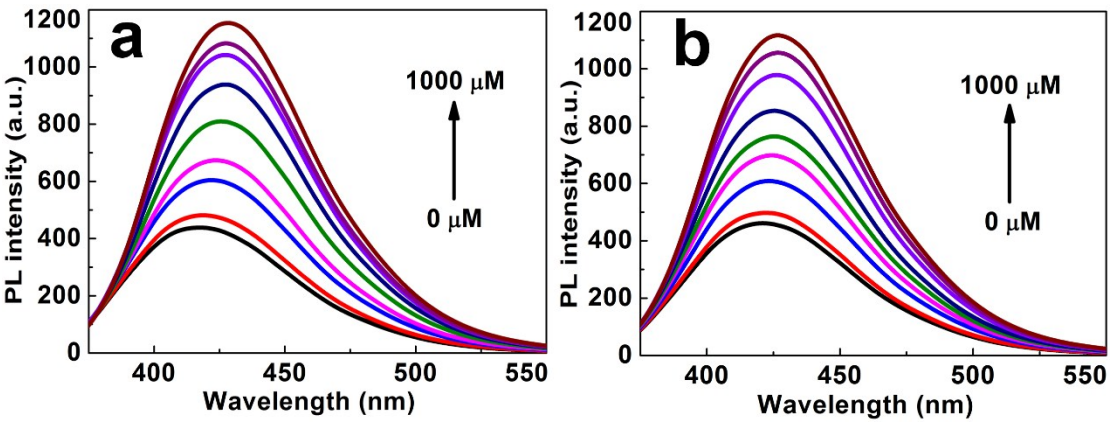

Fig.S6 (a) The PL response of the N, S-CDs/AgNPs suspension towards different concentrations of Cys at pH 3.0; (b) The PL response of the N, S-CDs/AgNPs suspension towards different concentrations of Hcy at pH 3.0. Concentration: N, S-CDs, 200 μg mL^{-1}; AgNPs, 1.2 mM.

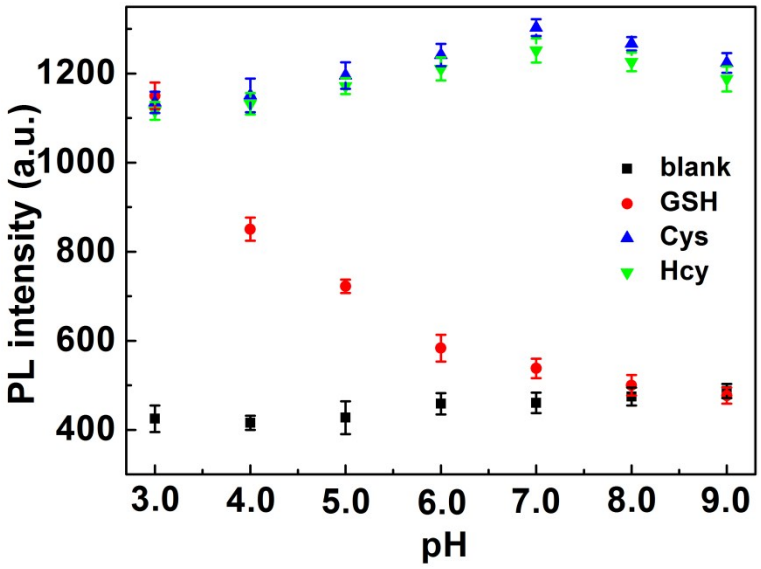

Fig.S7 Effect of pH value on PL of the N, S-CDs/AgNPs in the absence and presence of different kinds of biothiols. Concentration: N, S-CDs, 200 μgmL^{-1}; AgNPs, 1.2 mM; all the biothiols, 100.0 μM. The error bars are obtained via three independent experiments.

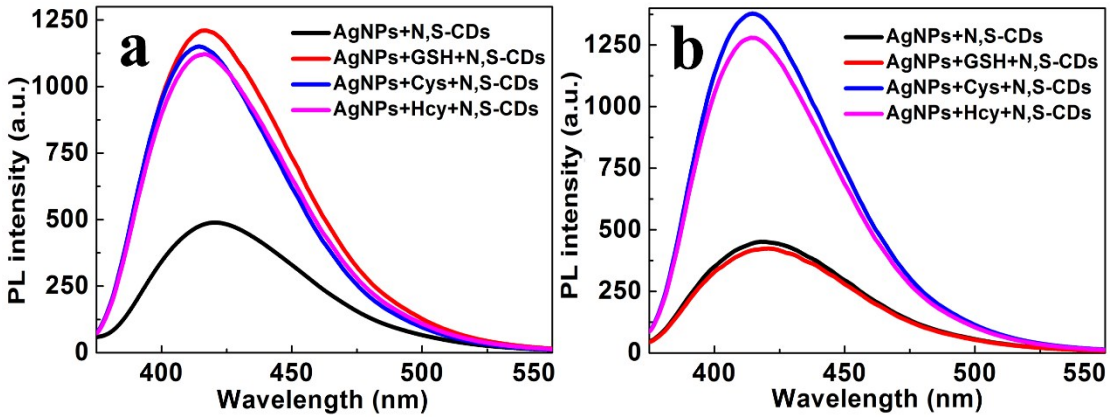

Fig.S8 (a) The PL response of the N, S-CDs/AgNPs suspension towards different kinds of biothiols at pH 3.0; (b) the PL response of the N, S-CDs/AgNPs suspension towards different kinds of biothiols at pH 7.0. Concentration: N, S-CDs, 200 μg mL^{-1}; AgNPs, 1.2 mM; all the biothiols, 100.0 μM.

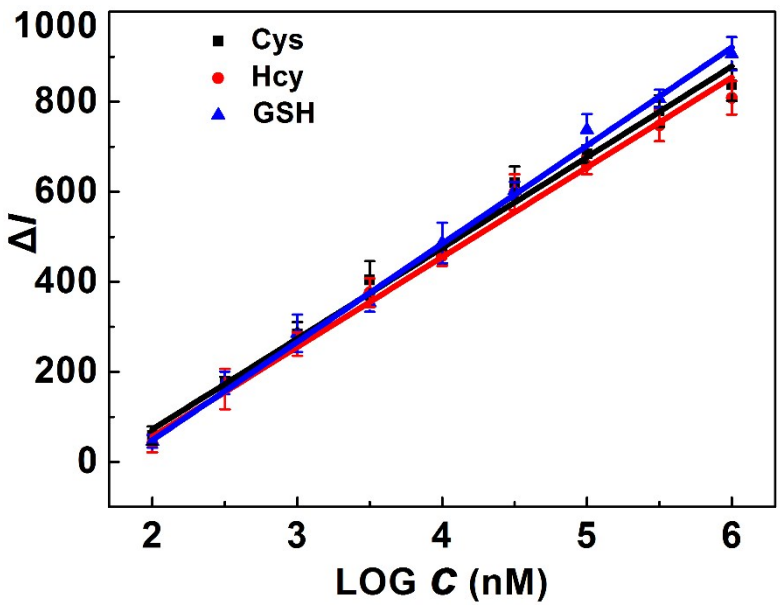

Fig.S9 The calibration curves for GSH, Cys and Hcy at pH 3.0. Concentration: N, S-CDs, 200.0 μg mL^{-1}; AgNPs, 1.2 mM. The error bars are obtained via three independent experiments.