Electronic Supplementary Information

Controlling over the ligands of CdZnTe quantum dots to design a super simple ratiometric fluorescence nanosensor for silver ions detection†

Haining Cui,[a] Chengquan Wang,[b] Suli Jia,[a] Jing Qian,*[,a] Qi Zhang,[a] Yunmeng Tian,[a] Nan Hao,[a] Jie Wei,[a] Lingliang Long[a] and Kun Wang*[,a, c]

[a]*School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang 212013, PR China*

[b]*School of Food and Biological Engineering, Jiangsu University, Zhenjiang 212013, PR China*

[c]*Key Laboratory of Sensor Analysis of Tumor Marker, Ministry of Education, College of Chemistry and Molecular Engineering, Qingdao University of Science and Technology, Qingdao 266042, PR China*

*Corresponding author: E-mail addresses: qianj@ujs.edu.cn (J. Qian); wangkun@ujs.edu.cn (K. Wang)

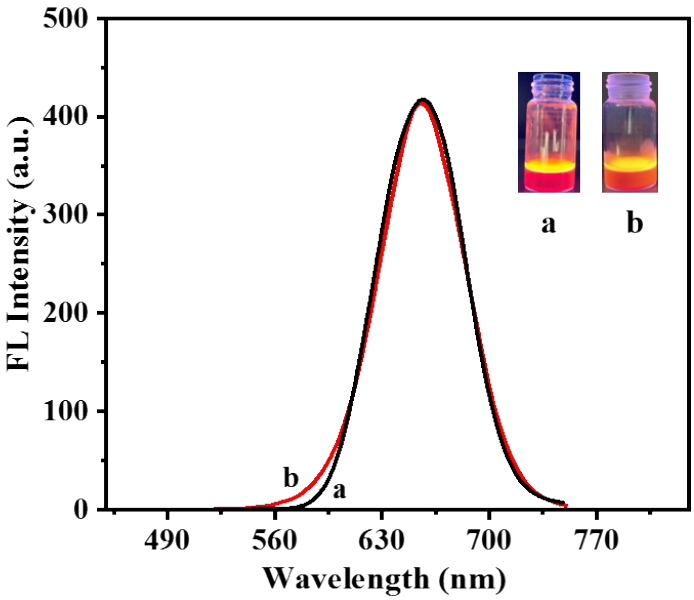

Fig. S1. Fluorescence spectra and corresponding photographs (inset) of (a) the freshly prepared NAC-CdZnTe QDs and (b) NAC-CdZnTe QDs stored at 4 °C for at least 6 months.

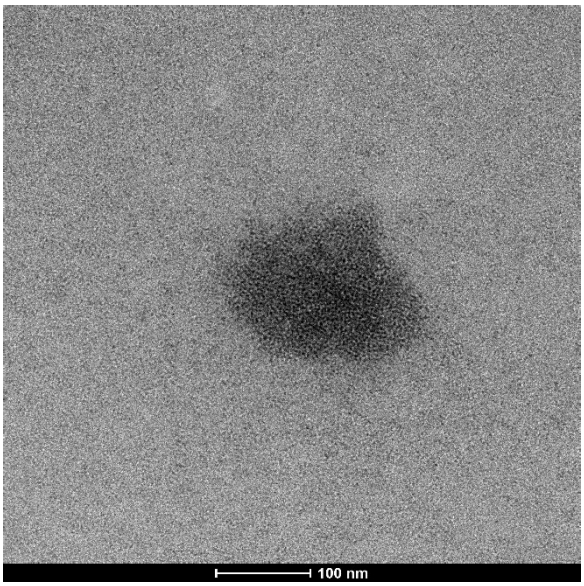

Fig. S2. TEM image of green Lcys-CdZnTe QDs.

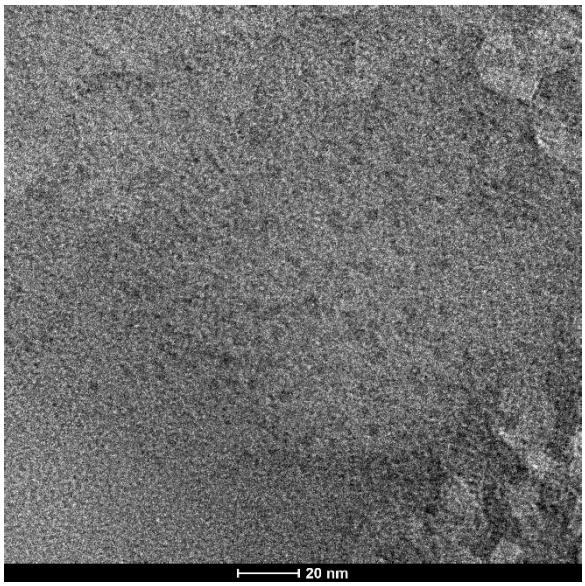

Fig.S3. TEM image of red NAC-CdZnTe QDs.

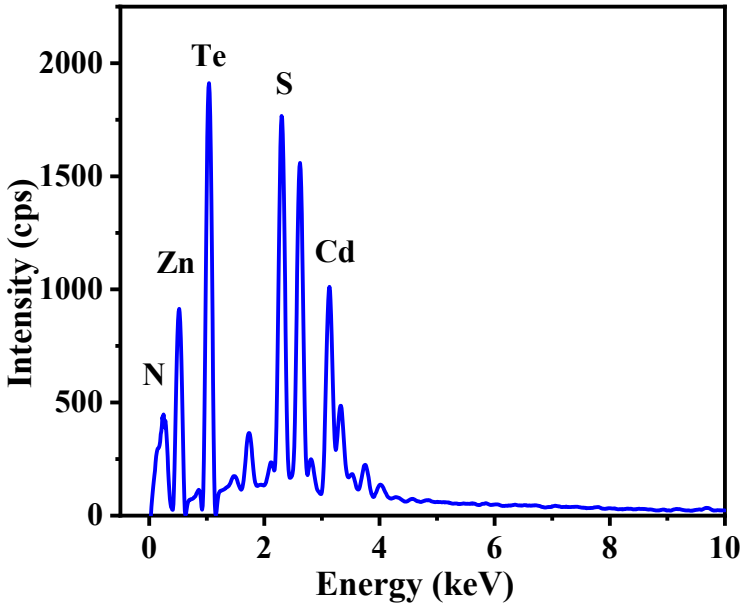

Fig. S4. EDS based on TEM image of green Lcys-CdZnTe QDs.

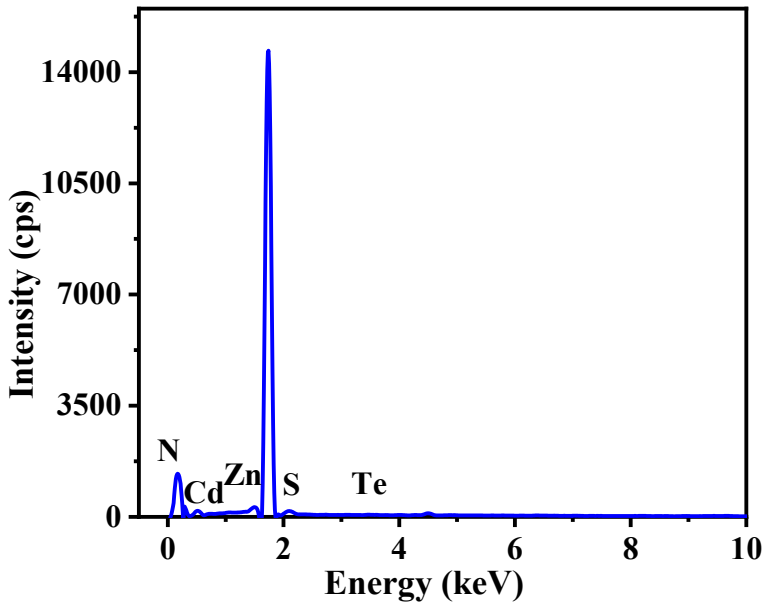

Fig. S5. EDS based on TEM image of red NAC-CdZnTe QDs.

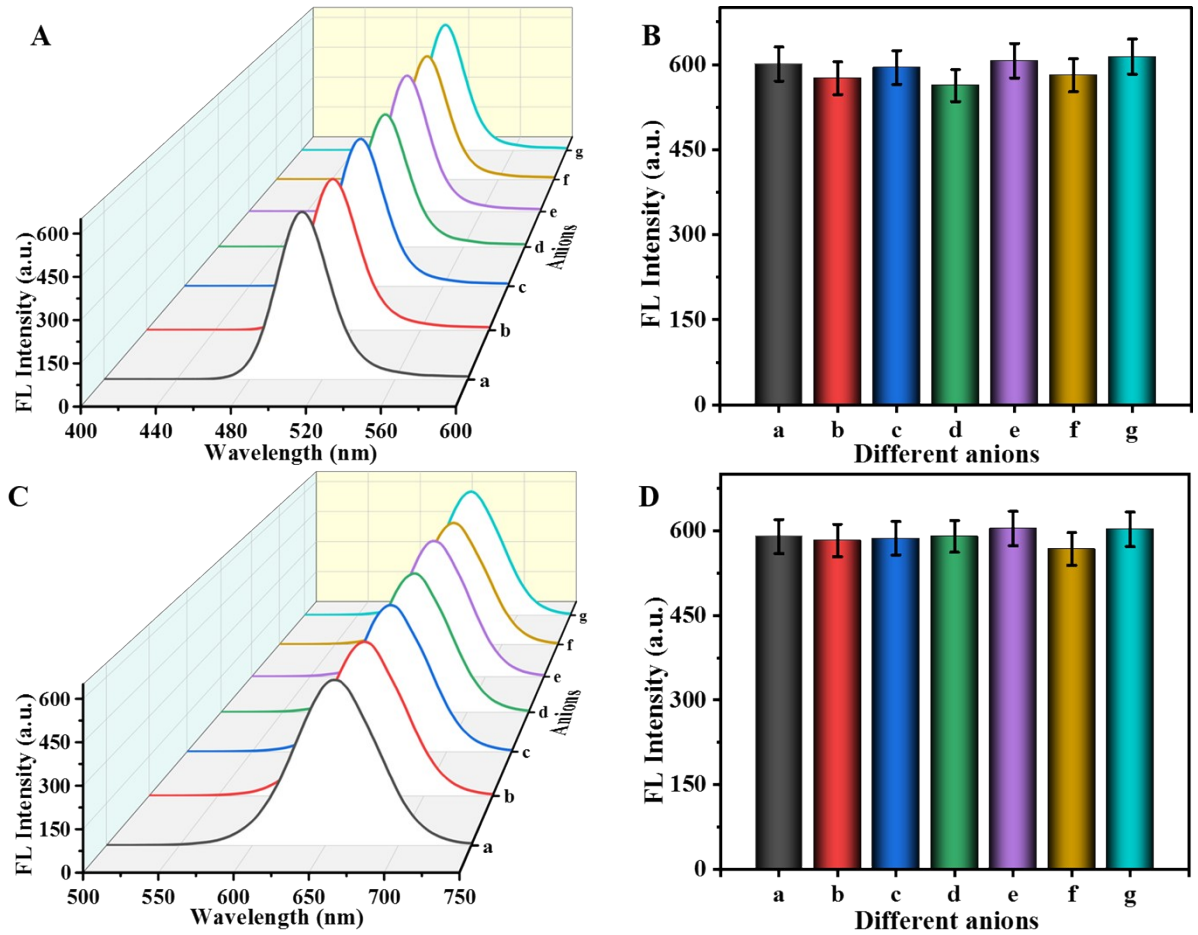

Fig. S6. (A, C) Fluorescence spectra and (B, D) fluorescence intensity of (A, B) green-emitting Lcys-CdZnTe QDs and (C, D) red-emitting NAC-CdZnTe QDs incubated with different anions at a concentration of 5.0 μM. From a to g: Blank, Cl^-, CO_3^{2-}, PO_4^{3-}, Ac^-, SO_4^{2-}, and NO_3^-.

Table S1 Response time to Ag^+ in different works.

Method	Probe	Reaction time	Reference
Fluorescence polarization	proflavine-DNA complex	30 min	S1
Fluorescence	BODIPY-Porphyrin Dyad	30 min	S2
Fluorescence	heptamethine cyanine dye **QCy**	1 min	S3
Fluorescence	thio-urea based chemosensor **L**	＜1 min	S4
Fluorescence	**CHa**	120 min	S5
Fluorescence	Lcys-CdZnTe QDs /NAC-CdZnTe QDs	1 min	This work

References

S1 L. Qi, Z. Yan, Y. Huo, X. M. Hai and Z. Q. Zhang, *Biosens. Bioelectron.*, 2017, **87**, 566-571.

S2 M. L. Zhu, Y. B. Zhou, L. G. Yang, L. Li, D. D. Qi, M. Bai, Y. T. Chen, H. W. Du and Y. Z. Bian, *Inorg. Chem.*, 2014, **53**, 12186-12190.

S3 Y. W. Zhang, A. Y. Ye, Y. W. Yao and C. Yao, *Sensors*, 2019, **19**, 247.

S4 A. K. Manna, J. Mondal, R. Chandra, K. Rout and G. K. Patra, *J. Photochem. Photobiol., A: Chem.*, 2018, **356**, 477-488.

S5 H. Y. Tang, Y. Gao, B. Li, C. W. Li and Y. Guo, *Sens. Actuators, B: Chem.*, 2018, **270**, 562-569.