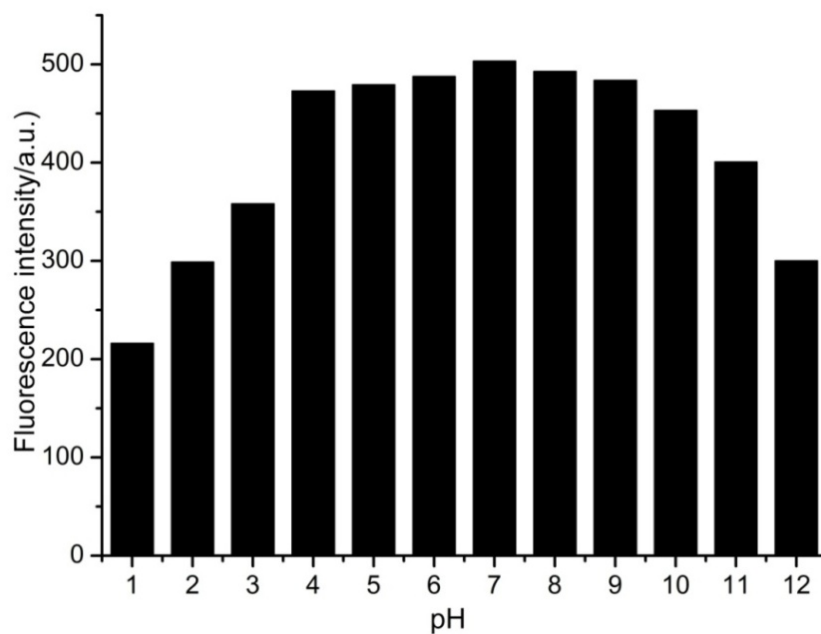


## **Electronic Supplementary Information (ESI)**

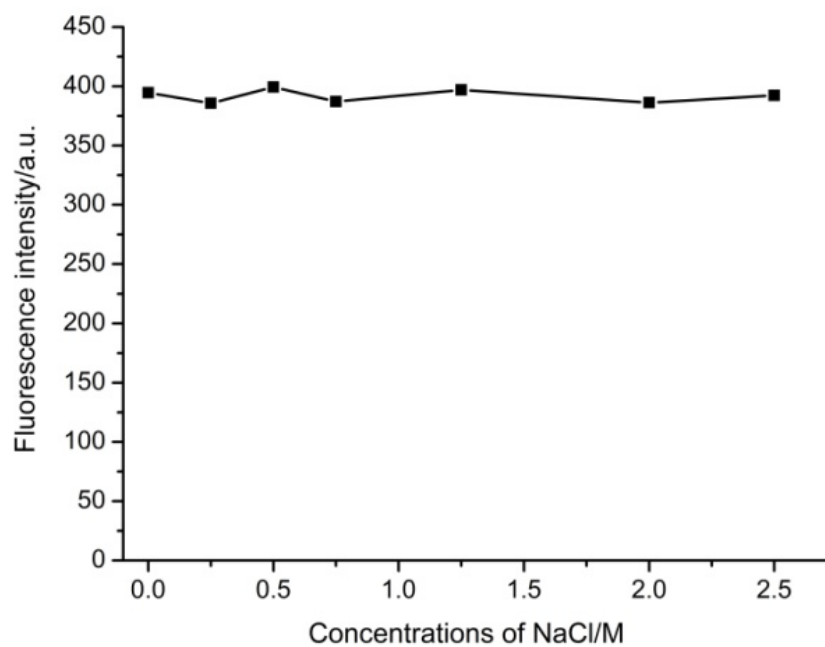
### **Green preparation of fluorescent carbon dots from lychee seed and its application for selective detection of methylene blue and imaging in living cells**

Mingyue Xue,<sup>ab</sup> Mengbing Zou,<sup>a</sup> Jingjin Zhao,<sup>\*a</sup> Zhihua Zhan<sup>ab</sup> and Shulin Zhao<sup>\*a</sup>

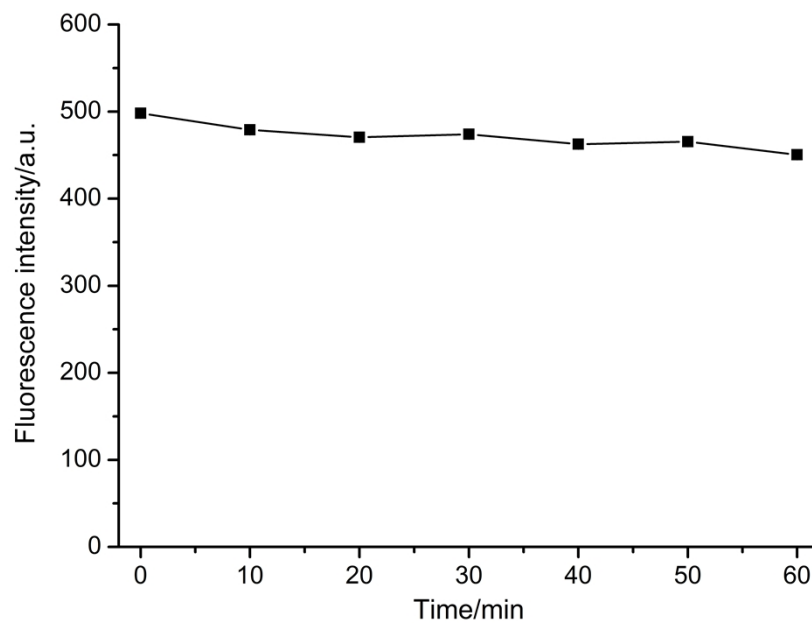
- a Key Laboratory for the Chemistry and Molecular Engineering of Medicinal Resources (Ministry of Education), College of Chemistry and Pharmacy, Guangxi Normal University, Guilin, 541004, China
- b Guilin Normal College, Guilin, 541001, China.



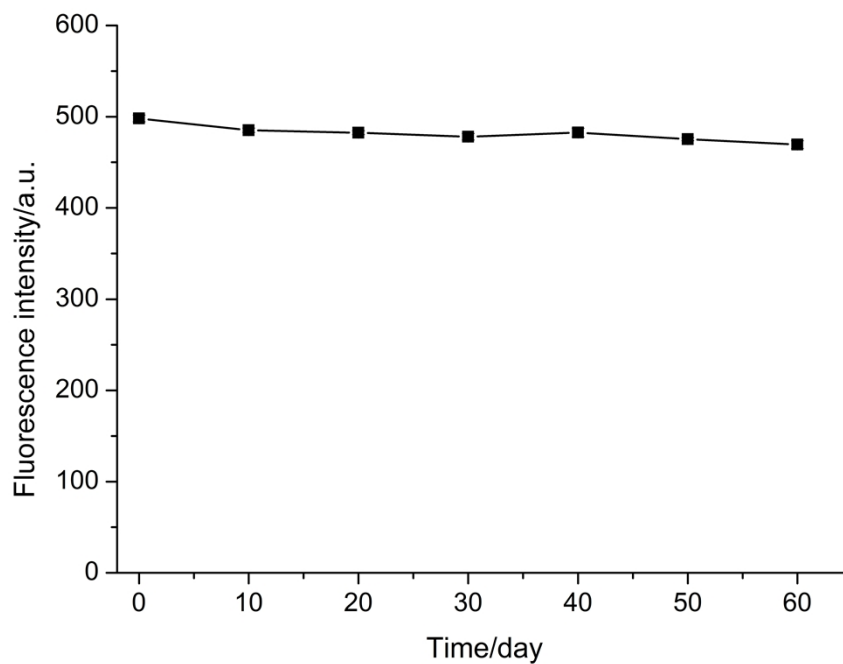
**Fig. S1** Effect of pH value on the fluorescence intensity of the as-prepared CDs.



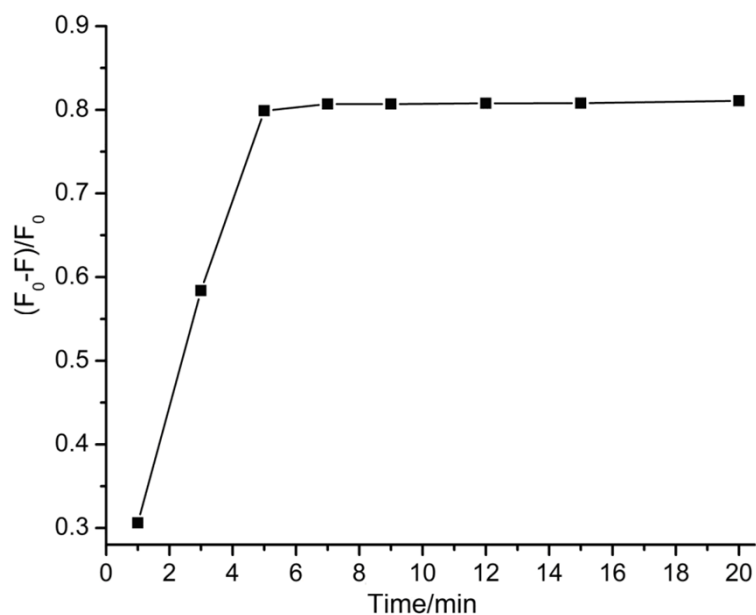
**Fig. S2** Fluorescence intensity of as-prepared CDs in pH 7.4 PB solution after adding various concentrations of NaCl solutions.



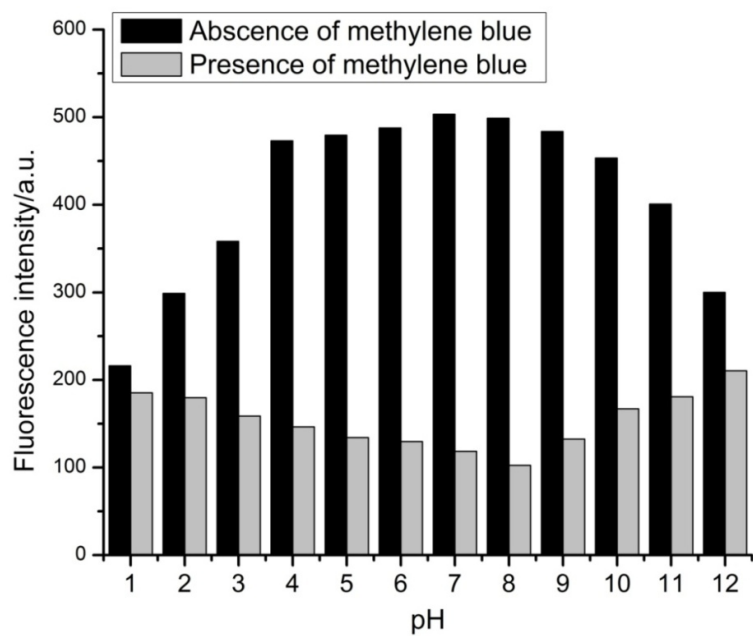
**Fig. S3** The fluorescence intensity variation of the CDs under 365 nm UV light illumination.



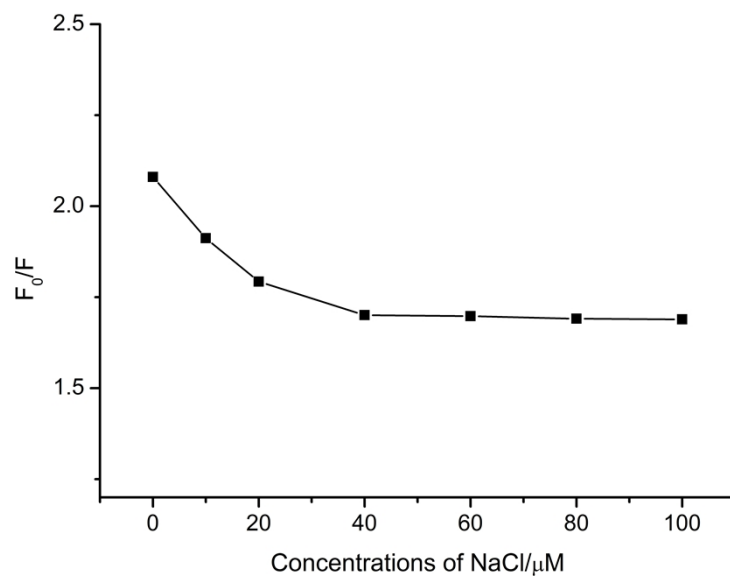
**Fig. S4** The fluorescence intensity variation of the as-prepared CDs with storage time.



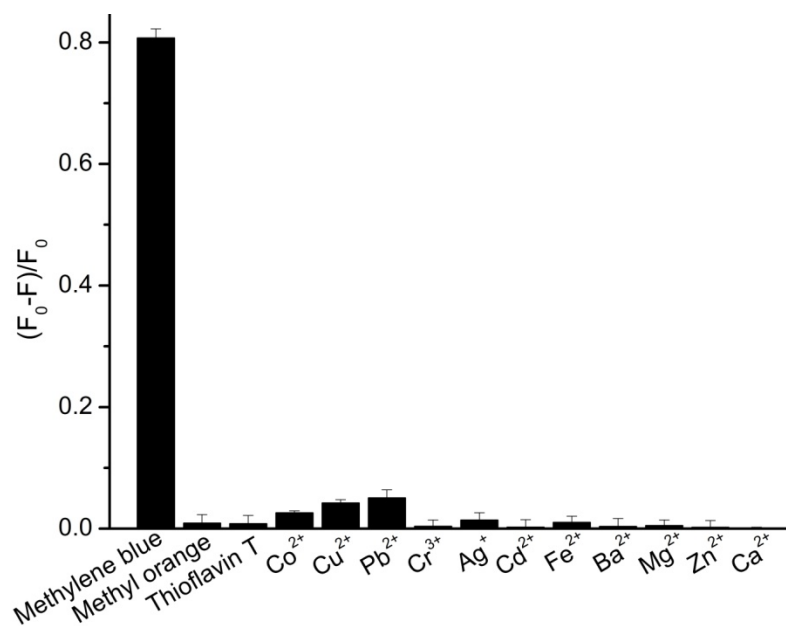
**Fig. S5** Time-dependent fluorescence response of the CDs to 50  $\mu$ M methylene blue in pH 8.0.



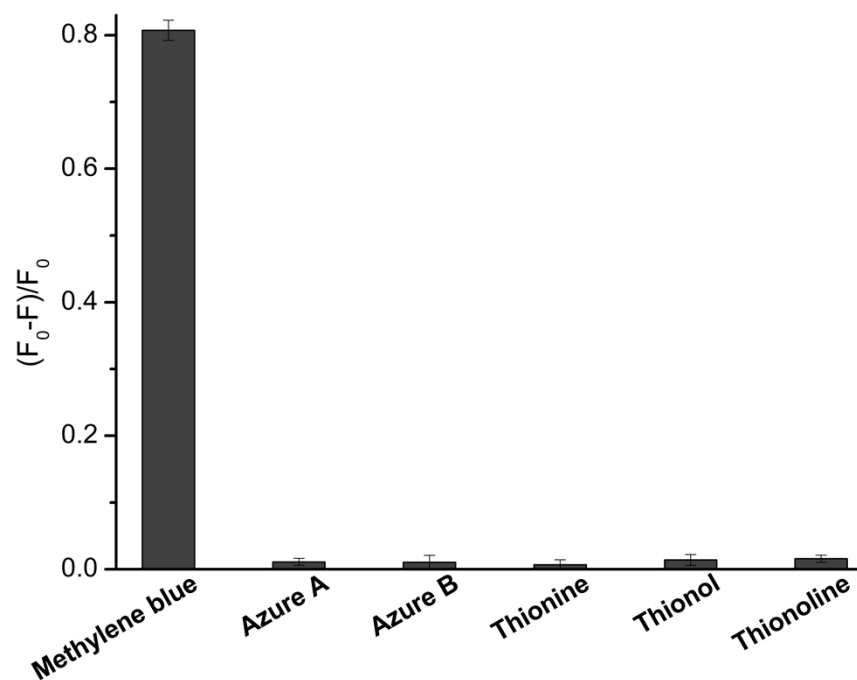
**Fig. S5** Effect of the solution pH value on the fluorescence intensity of CDs in the absence and presence of 50  $\mu$ M methylene blue.



**Fig. S7** Effect of NaCl on the fluorescence quenching of CDs. (the concentrations of CDs:  $10 \text{ g mL}^{-1}$ ; the concentrations of methylene blue:  $6 \text{ }\mu\text{M}$ .)



**Fig. S8** Comparison of quenching efficiency of CDs after the addition of different substances (concentrations of all substances were  $10 \text{ }\mu\text{M}$ ).



**Fig. S9** Comparison of quenching efficiency of CDs after the addition of methylene blue and its possible oxidation products (concentrations of all substances were 10  $\mu$ M).

**Table 1.** Comparison of the assay performance of the proposed strategy with other methods.

Methods	Linear range	Limit of detection	References
Capillary electrophoresis	1.0-60 µg/mL	1.0 µg/mL	1
Cation exchange chromatography coupled to tandem mass spectrometry	75 ng/mL-10 µg/mL	75 ng/mL	2
Capillary electrophoresis / electrospray ionization mass spectrometry	0.5-8.0 µg/mL	0.22 µg/mL	3
Liquid chromatography-tandem mass spectrometry	1-1000 ng/mL	1 ng/mL	4
Electrochemical assay	10 nM-1.0 µM	4.1 nM	5
A silver nanoparticle-modified evanescent field optical fiber sensor	0-0.4 mM	0.03 mM	6
Carbon dots-based fluorescence assay	0.2-10 µM (64 ng/mL-3.2 µg/mL)	0.05 µM (16 ng/mL)	This work

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