Supporting Information

Highly Photoluminescent Carbon Dots Derived from Linseed and Their Applications in Cellular Imaging and Sensing

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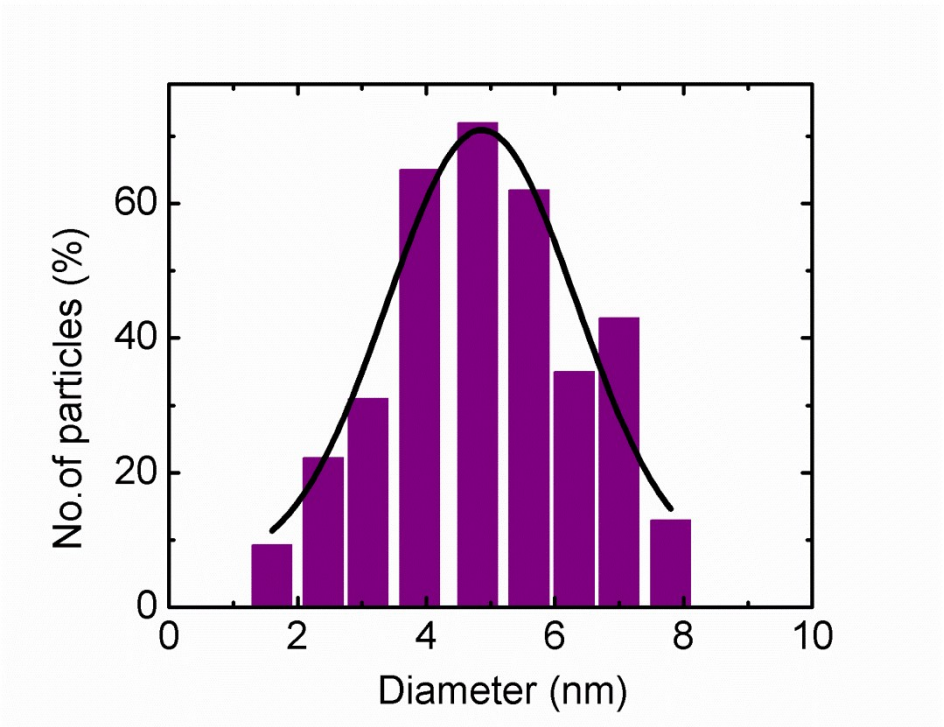

Figure S1. The DLS analysis of CDs in water.

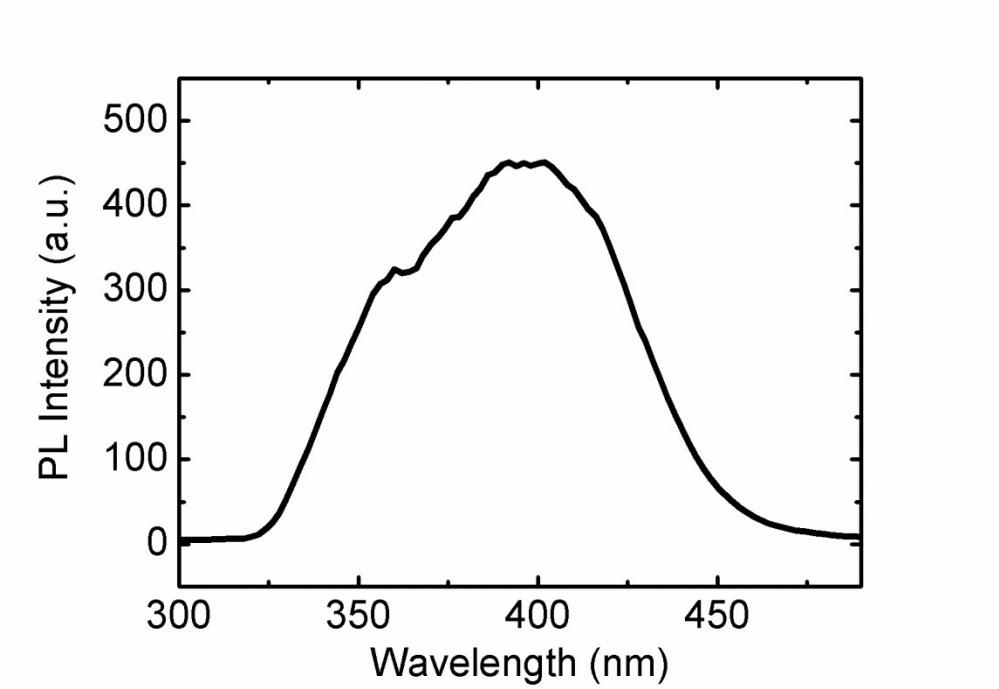

Figure S2. The excitation spectrum of CDs with the maximum PL intensity at 395 nm.

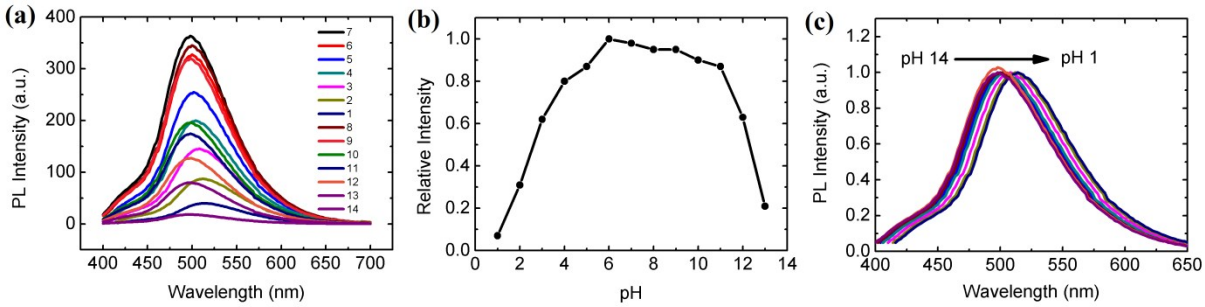

Figure S3. (a) Fluorescence spectra of the CDs at different pH values under excitation at 365 nm. (b) Variation of the PL intensity with the changing of the pH value. (c) Normalized PL spectra of CDs with pH values varying from 14 to 1.

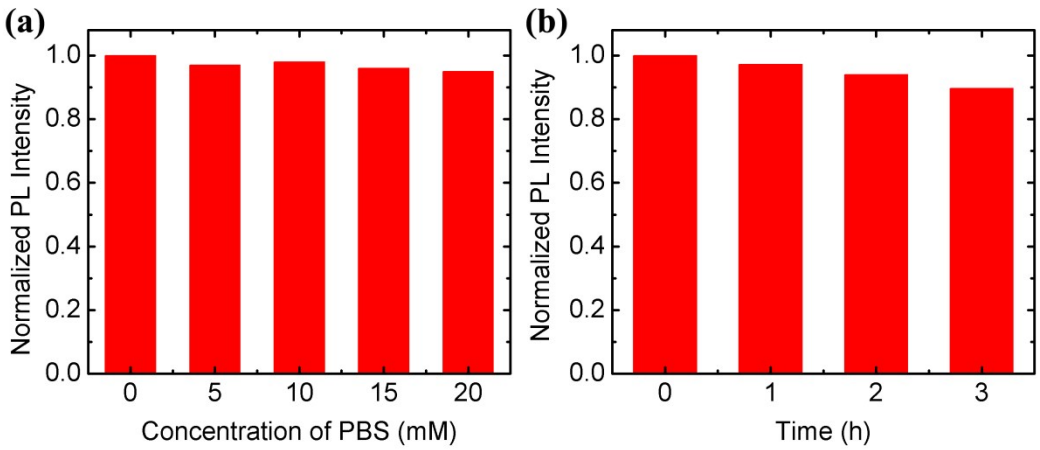

Figure S4. The stability of CDs. (a) Effect of ionic strength on the fluorescence intensity of CDs. (b) Dependence of fluorescence intensity on excitation time for CDs in aqueous solution.

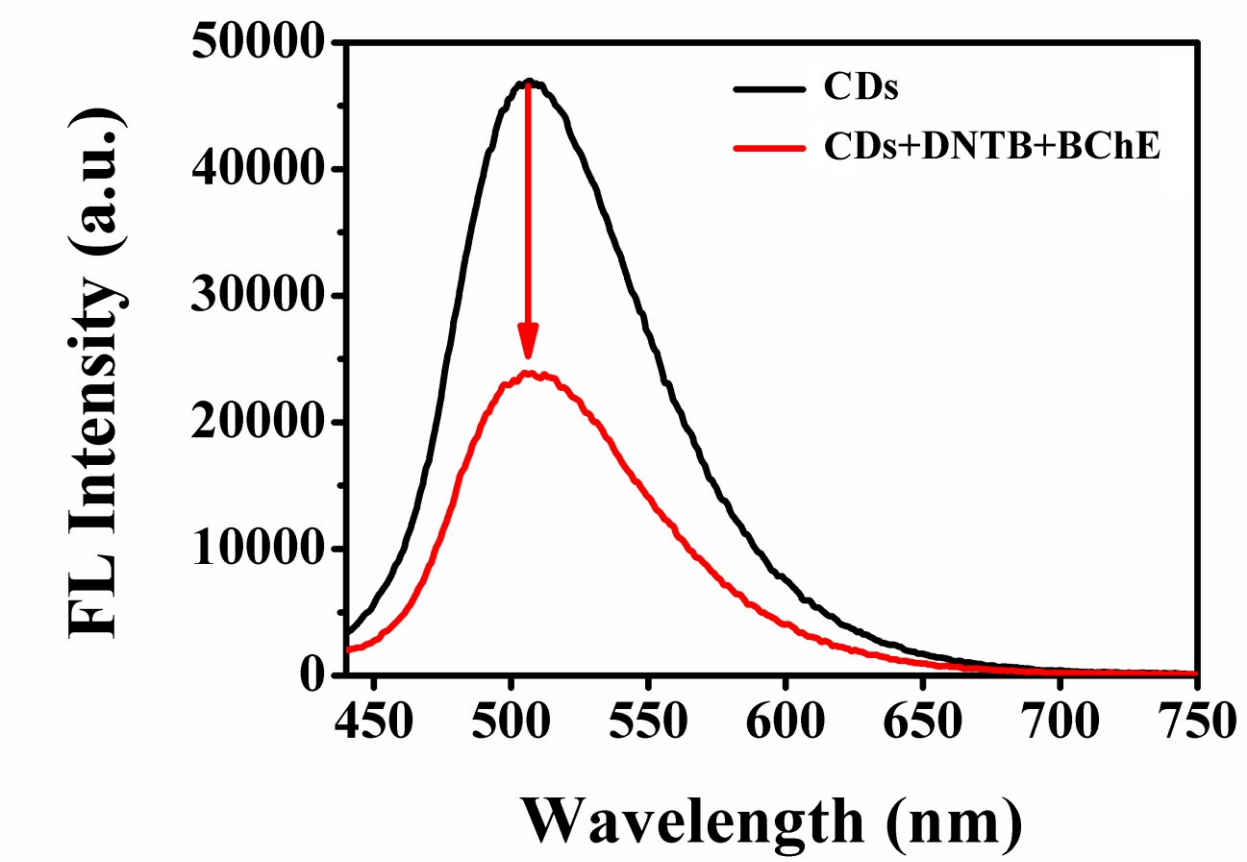

Figure S5. The fluorescence spectra of CDs and CDs/DNTB/BChE.

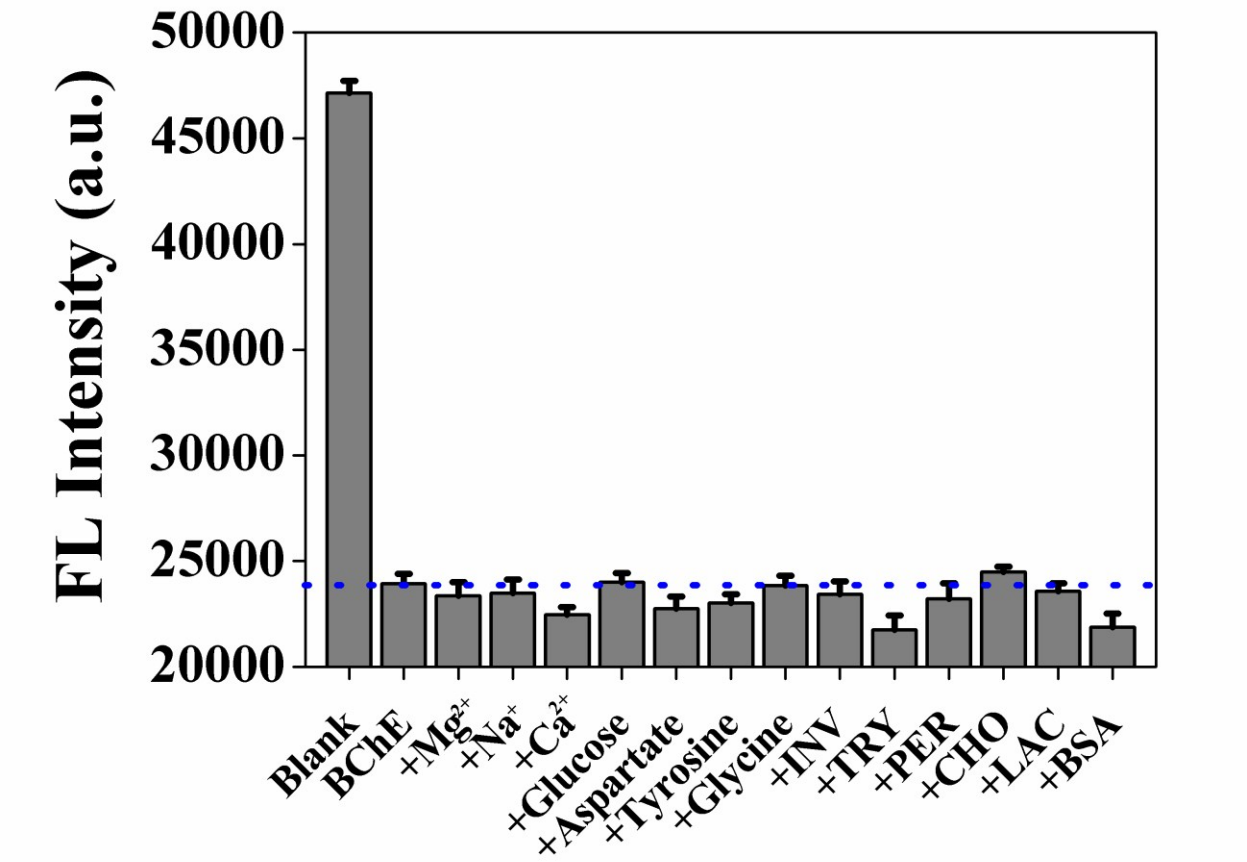

Figure S6. The fluorescence intensity of the CDs system in the presence of the interfering substances (500 μg mL^{-1} for protein and 0.5 mmol L^{-1} for other substance) or 150 mU mL^{-1} of BChE.

Determination of QY

Rhodamine B (ethanol as solvent; QY = 0.56) was chosen as a standard. The QYs of CDs (in ethanol) were calculated according to the relative method. The QY of a sample was then calculated according to the following equation:

$$\phi = \phi^{'} \times \frac{A^{'}}{I^{'}} \times \frac{I}{A} \times \frac{n^2}{n^{'2}}$$

where ϕ is the QY of the testing sample, I is the testing sample's integrated emission intensity, n is the refractive index (1.36 for ethanol), and A is the optical density. The superscript "," refers to standard with known QY. In order to minimize reabsorption effects, a series of solutions of CDs and referenced fluorescence dye were prepared with concentrations adjusted such that the absorption in the 10 mm fluorescence cuvette was kept below 0.10 at the excitation wavelength (a). The PL spectra were measured and the PL intensity was integrated. QYs were determined by comparison of the integrated PL intensity vs absorbance curves (b).

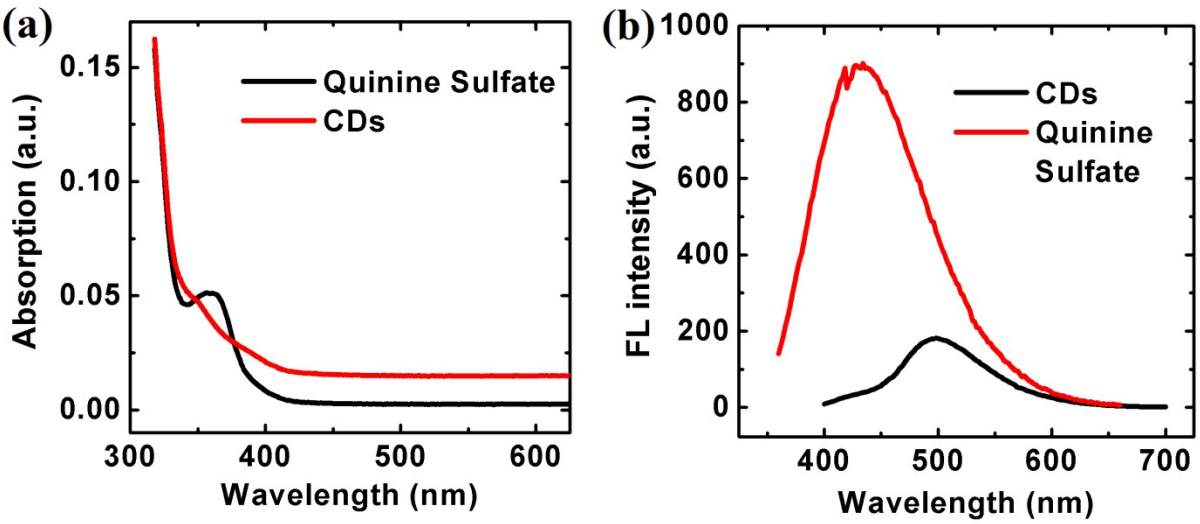

Figure S7. (a) absorption and (b) emission spectra of CDs and quinine sulfate.

Table S1. Comparison of the proposed method with other methods for BChE detection

Method	Linear range (mU mL^{-1})	Detection Limit (mU mL^{-1})	Reference
Silver nanoclusters	0.1-1.25	0.05	1
DNA-templated copper/silver nanoclusters	0.05-2.0	0.05	2
Quantum dots	10 -1000	10	3
Pyrene Probe	100-10000	/	4
Gold nanoclusters	5-150	0.02	5
Resurfaced Fluorescent Protein	0.025-2	0.015	6
C_3N_4 nanodots	0.01 - 3	0.01	7
Colorimetric assay	0 -30 $\times 10^{-3}$	4.3×10^{-3}	8
Graphene quantum dot	10^{-5}- 10^{-2} U	2.3×10^{-6} U	9
Metal coordination polymer	/	0.04	10
Colorimetric assay	/	200	11
Colorimetric assay	0.06-300	0.035	This work

Supplementary References

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