

A sensitive “ON-OFF” fluorescent probe based on carbon dots for
 Fe^{2+} detection and cell imaging

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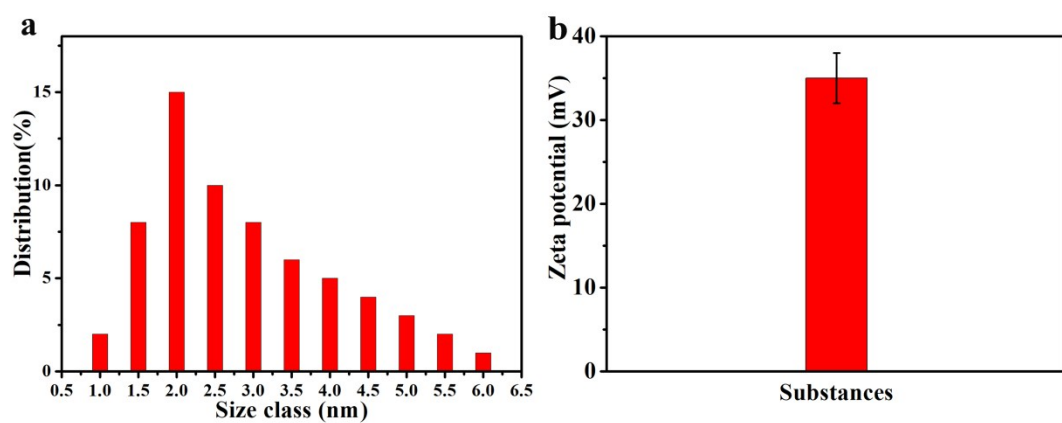


Fig. S1 (a) DLS particle size distribution of CDs. (b) Zeta potential of CDs.

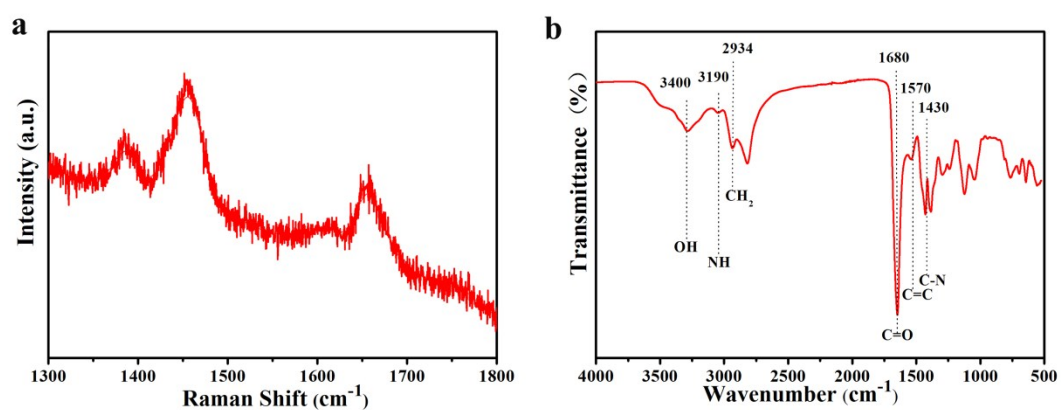


Fig. S2 (a) Raman and (b) FTIR spectra of CDs.

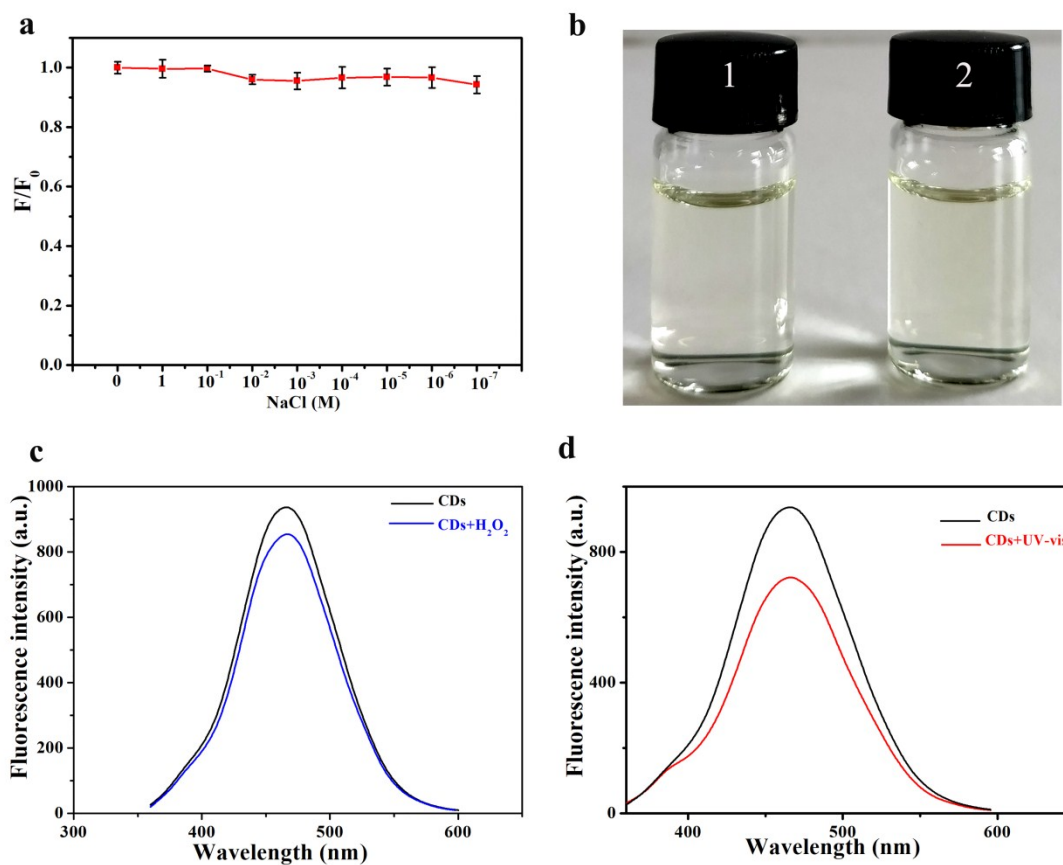


Fig. S3 (a) Fluorescence spectra of CDs treated with different concentrations of NaCl solutions. (b) 1 and 2 were photos of CDs stored for 3 months. (c) Fluorescence spectra of CDs before and after irradiation for 4 hours under UV light. (d) Fluorescence spectra of CDs (black) and CDs+ H_2O_2 (blue).

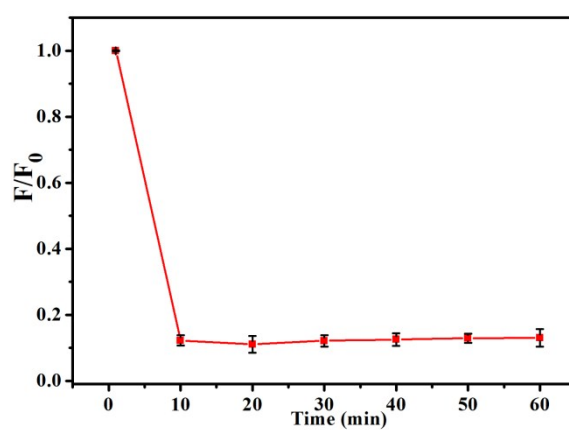


Fig. S4 Relationship between reaction time (0-60 min) and F/F_0 .

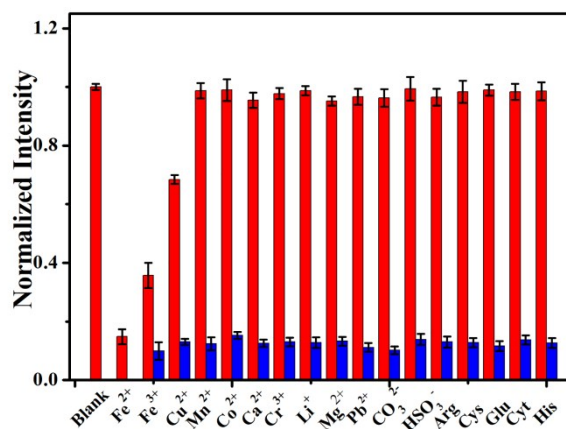


Fig. S5 Fluorescence response of CDs with various ions and biological small molecules (red) and CDs / Fe²⁺ + ions/biological small molecules (blue).

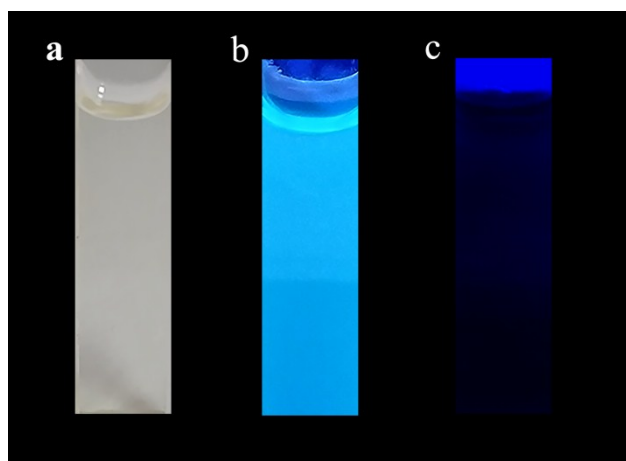


Fig. S6 (a) Photograph of CDs, (b) fluorescent photo of CDs and (c) the CDs fluorescence quenched by Fe²⁺.

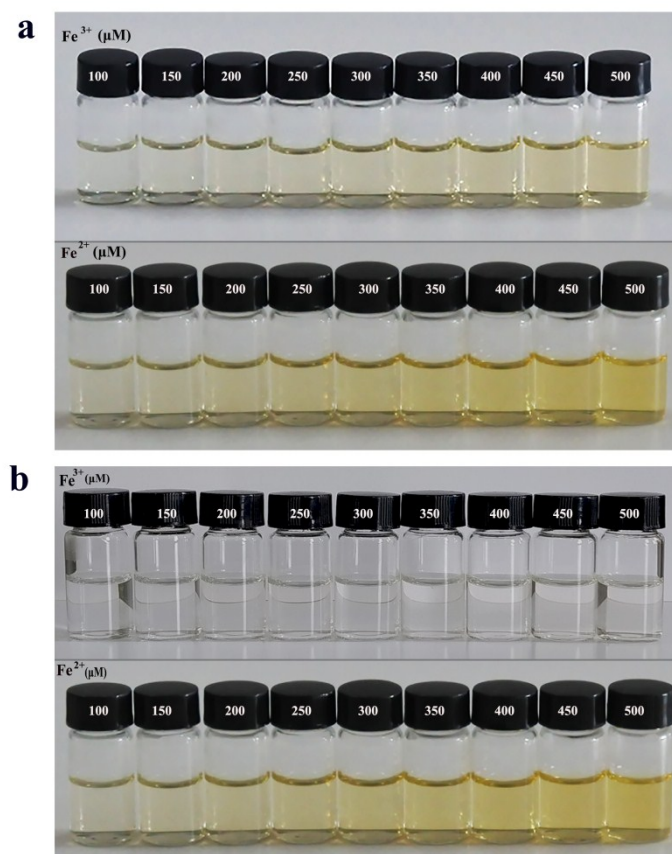


Fig. S7 Colorimetric detection photos (a) Fe^{2+} (bottom) and Fe^{3+} (top) sets, respectively. (b) Colorimetric photos of Fe^{2+} and Fe^{3+} after the addition of tartaric acid.

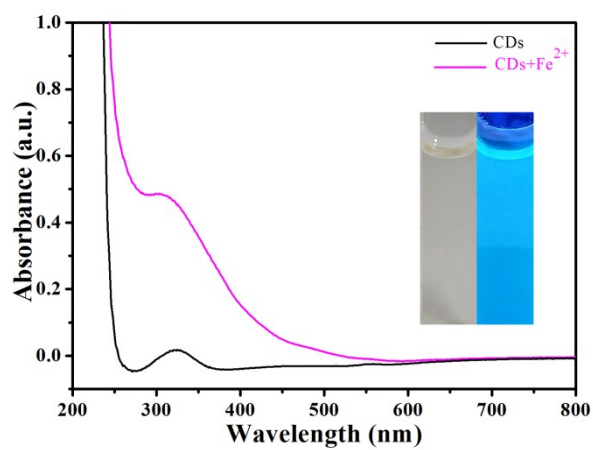


Fig. S8 Ultraviolet absorption spectra of CDs before and after the addition of Fe^{2+} .

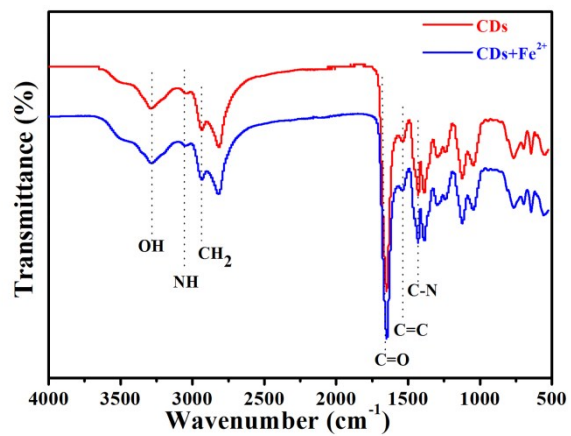


Fig. S9 Infrared spectra of CDs before and after the addition of Fe^{2+} .

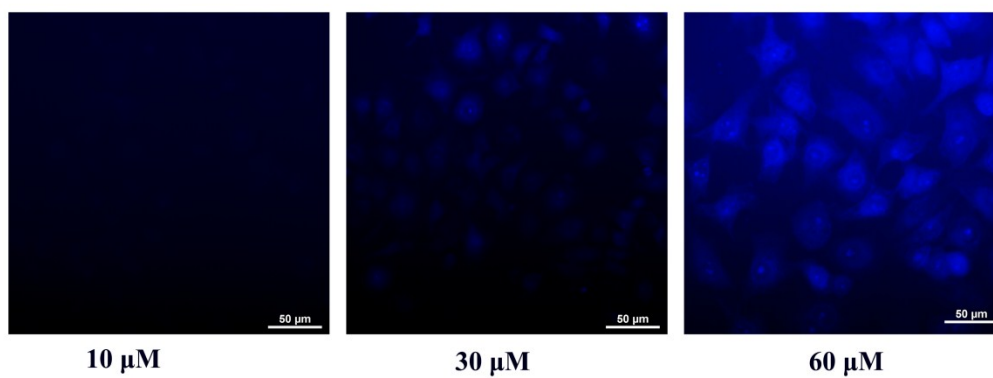


Fig. S10 Confocal microscopy images of MCF-7 cells co-incubated with CDs ($10 \mu\text{g}\cdot\text{mL}^{-1}$, $30 \mu\text{g}\cdot\text{mL}^{-1}$, $60 \mu\text{g}\cdot\text{mL}^{-1}$).