Electronic Supplementary Information

Nanosensor of sulfur-nitrogen co-doped carbon dots for “off-on” sensing of hypochlorous acid and Zn(II) and its bioimaging

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Fig. S1 Effect of ionic strengths on the fluorescence intensity of SNCDs by various concentrations of NaCl in aqueous solution.
**Fig. S2** Relationships between the quenching efficiency and pH value of SNCDs solution, inset: the linear response range of the pH sensor.

**Fig. S3** Fluorescence thermosensitivity of SNCDs: (a) Fluorescence emission spectra measured in the range of 15-75 °C (from top to bottom) when excited at 420 nm; (b) The corresponding linear regression of the temperature versus $F_0$. 

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**Fig. S4** Effects of time intervals of irradiation with a 3000 lux light (a) and storage time (b) on the FL intensity of SNCDs.

**Fig. S5** UV-vis absorbance spectra of SNCDs (1.00 µg·mL\(^{-1}\)) upon addition of different concentrations of ClO\(^-\) from 0 to 120 µM.
**Fig. S6** Fluorescence “turn-off” process: (a) Effects of different SNCDs concentrations on the FL intensities and fluorescence quenching rates (left to right: 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75 and 2.00 µg·mL⁻¹) after addition of HOCl; (b) Effects of pH values on the fluorescence quenching rates (1.00 µg·mL⁻¹ of SNCDs upon addition of 2.50 µM of HOCl); (c) Effects of incubation time on the fluorescence quenching rates (1.00 µg·mL⁻¹ of SNCDs upon addition of 2.50 µM of HOCl); (d) Effects of incubation temperature on the fluorescence quenching rates (1.00 µg·mL⁻¹ of SNCDs upon addition of 2.50 µM of HOCl).
Fig. S7 Fluorescence “turn-on” process: (a) Effects of different SNCDs concentrations on the fluorescence recovery rates (left to right: 0.25, 0.50, 0.75, 1.00, 1.25, 1.50, 1.75 and 2.00 µg·mL⁻¹) after addition of Zn²⁺; (b) Effects of pH values on the fluorescence recovery rates (1.00 µg·mL⁻¹ of SNCDs and 2.50 µM of HOCl upon addition of 1.00 µg·mL⁻¹ of Zn²⁺); (c) Effects of incubation time on the fluorescence recovery rates (1.00 µg·mL⁻¹ of SNCDs and 2.50 µM of HOCl upon addition of 1.00 µg·mL⁻¹ of Zn²⁺); (d) Effects of incubation temperature on the fluorescence recovery rates (1.00 µg·mL⁻¹ of SNCDs and 2.50 µM of HOCl upon addition of 1.00 µg·mL⁻¹ of Zn²⁺).