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Supporting information

A New Fluorescent Probe for Zn^{2+} with Red Emission and Its Application in Bioimaging

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1. Characterization data

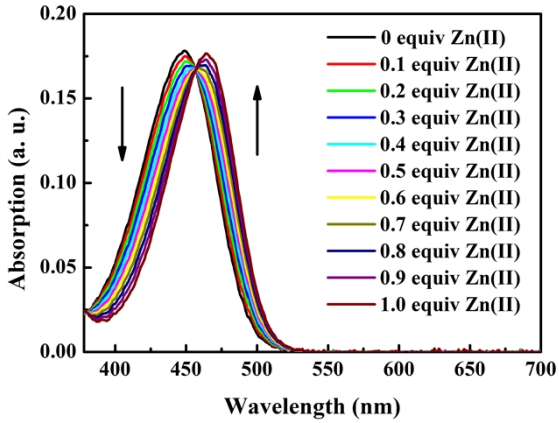

Figure S1. Absorption spectra of ZC-F4 (1μM) upon titration of Zn^{2+} at the concentration of 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0 equiv.

2. Job's plot analysis

Job's plot analysis is carried on to determine the stoichiometry of ZC-F4 with Zn^{2+}, during which the summation of [Zn^{2+}] and [ZC-F4] is kept as 0.15 μM. The results suggest that Zn^{2+} complex with ZC-F4 in 1:1 form.

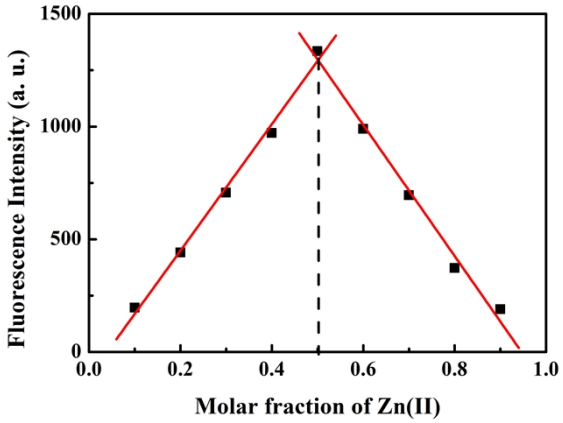

Figure S2. Job plot Analysis of the stoichiometry of ZC-F4 and Zn^{2+} (excited at 368 nm and monitored at 609 nm)

3. Calculation of pKa

The pKa of ZC-F4 was calculated by using the Henderson-Hasselbalch equation:

$$-\log\frac{F_{max}-F}{F-F_{min}} = \mathrm{pH} - \mathrm{p}K_a \quad (1)$$

where F_{max} and F_{min} are the corresponding maximum and minimum fluorescence intensity, F is the fluorescence intensity observed at a fixed wavelength. The pK_a of 26.11 for ZC-F4-Zn indicates ZC-F4 can form a stable complex with Zn^{2+}.

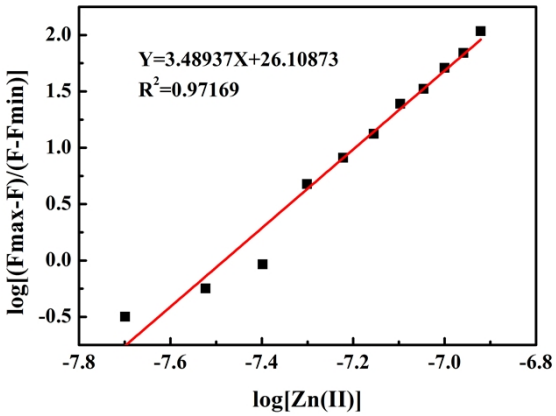

Figure S3. Analysis of fluorescence intensity changes as a function of [Zn^{2+}] by using Henderson–Hasselbalch equation.