

Supplementary Information

Highly sensitive fluorescent sensor for Al³⁺ and Zn²⁺ based on a diarylethene salicylhydrazide Schiff base derivative and its bioimaging in live cells

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Fig. S5. (a) Job's plot showing the 1 : 1 complex of **10** with Zn²⁺; (b) Hildebrand–Benesi plot based on the 1 : 1 for **10**, the binding constant of **10** with Zn²⁺ was calculated to be 1.42 × 10⁴ L mol⁻¹; (c) the limit of detection (LOD), LOD is 3.33 × 10⁻⁷ mol L⁻¹.

Fig. S6. ESI-MS spectrum changes in methanol: (a) [**10**+Al³⁺+2NO₃⁻-2H]⁻; (b) [**10**+Zn²⁺+NO₃⁻+H]⁺.

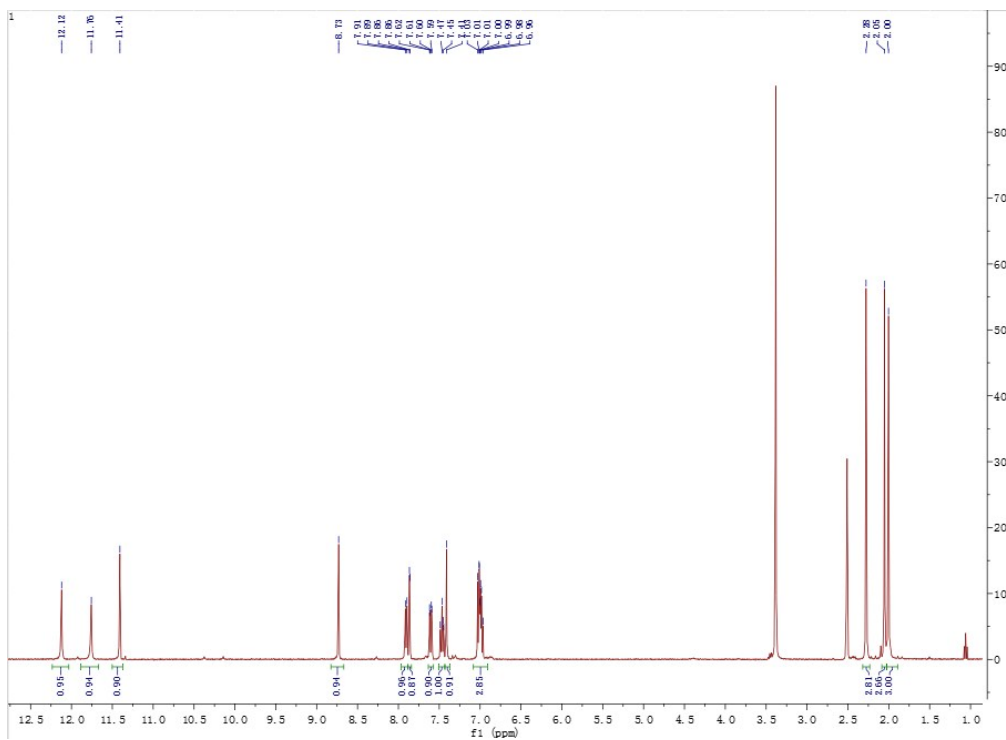


Fig. S1. ^1H NMR (400 MHz, DMSO) spectrum of **10**.

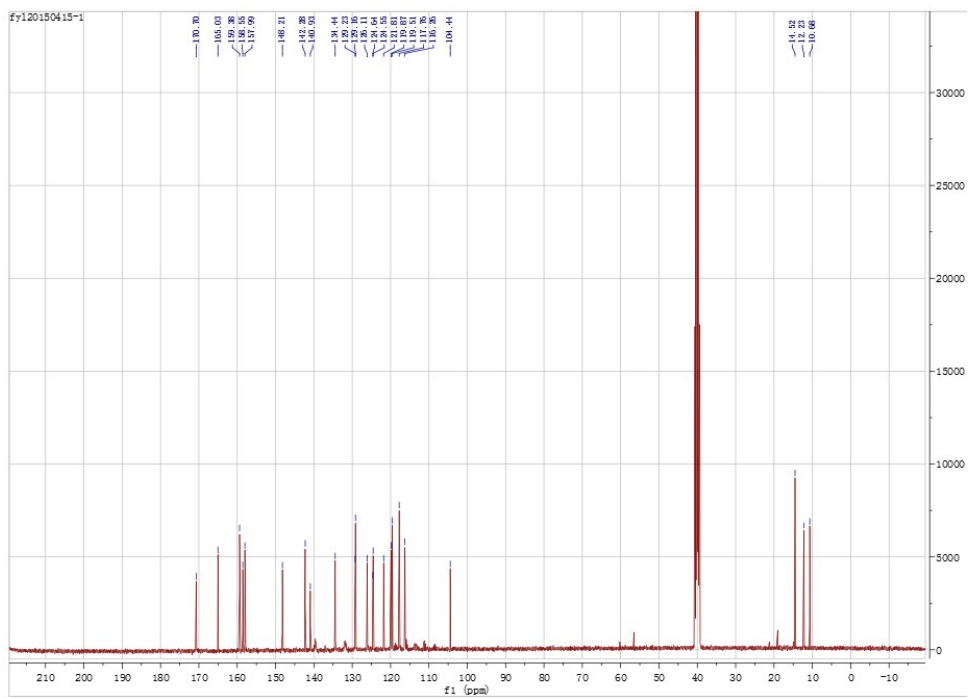


Fig. S2. ^{13}C NMR (100 MHz, DMSO) spectrum of **10**.

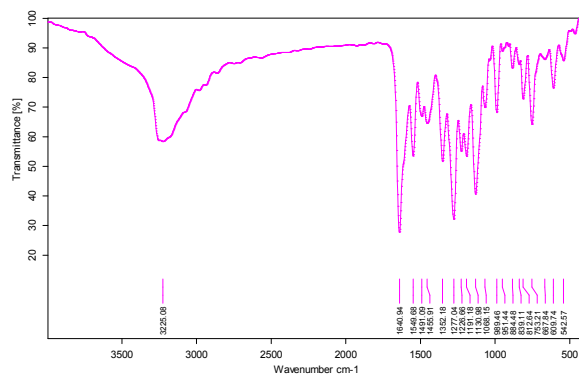
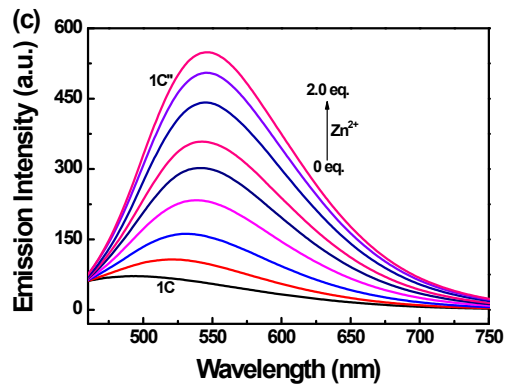
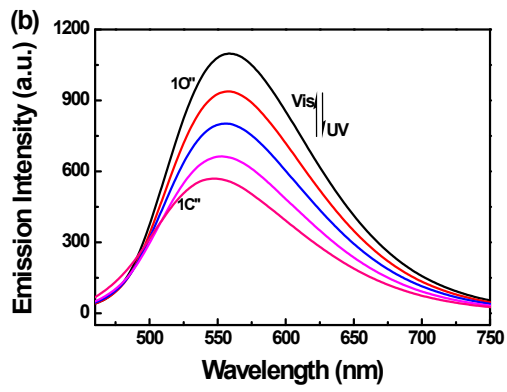
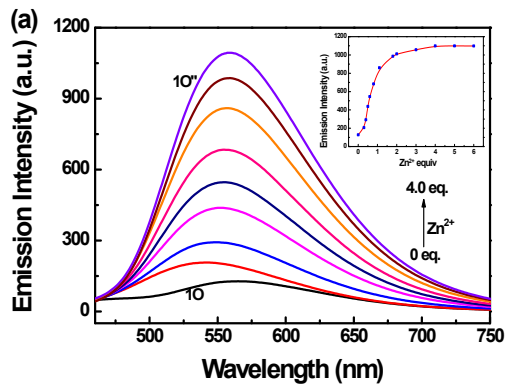


Fig. S3. IR spectra of **10**.



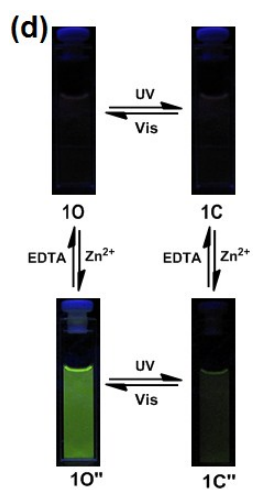


Fig. S4. Changes in fluorescence and color of **1** induced by Zn^{2+} /EDTA and light stimuli in methanol ($2.0 \times 10^{-5} \text{ mol L}^{-1}$): (a) **1O** induced by Zn^{2+} ; (b) **1O''** induced by photoirradiation; (c) **1C** induced by Zn^{2+} ; (d) photos demonstrating changes in its fluorescence.

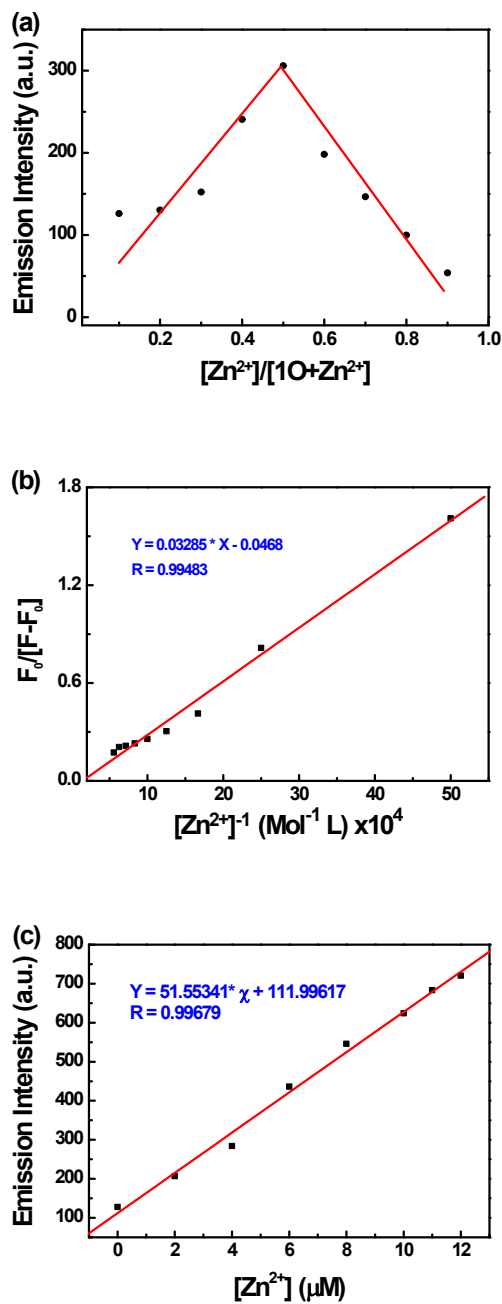


Fig. S5. (a) Job's plot showing the 1 : 1 complex of **10** with Zn^{2+} ; (b) Hildebrand–Benesi plot based on the 1 : 1 for **10**, the binding constant of **10** with Zn^{2+} was calculated to be $1.42 \times 10^4 \text{ L mol}^{-1}$; (c) the limit of detection (LOD), LOD is $3.33 \times 10^{-7} \text{ mol L}^{-1}$.

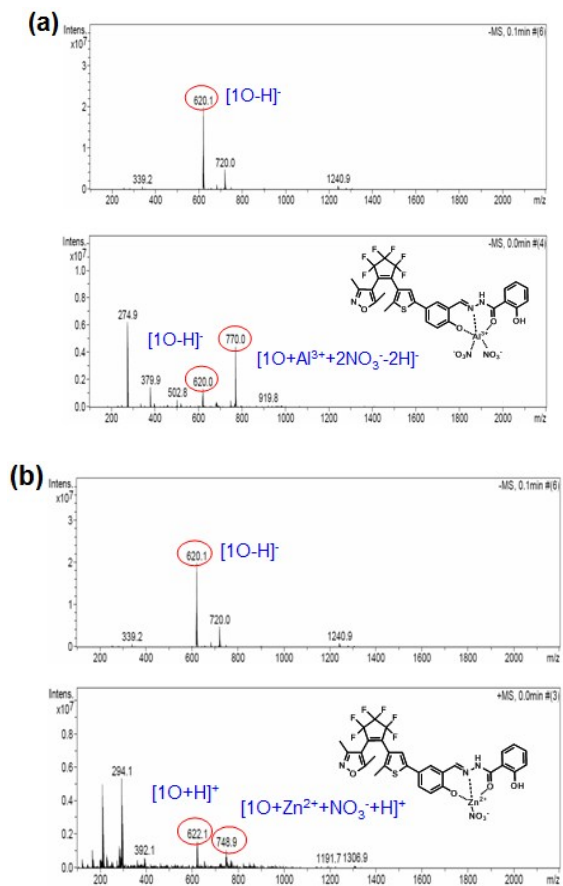


Fig. S6. ESI-MS spectrum changes in methanol: (a) $[1O+Al^{3+}+2NO_3^- - 2H]^-$; (b) $[1O+Zn^{2+}+NO_3^- + H]^+$.