

Supplementary Information (SI)

A highly selective fluorescent sensor for Al³⁺ based on a new diarylethene with a 3-hydroxy-2-naphthohydrazide unit

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1. Supplementary data

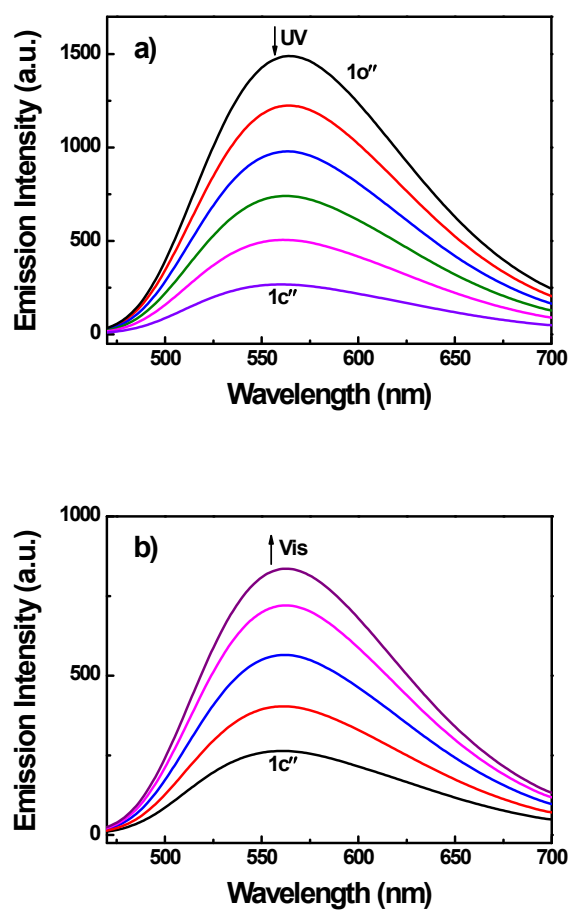


Fig. S1. (a) $1\mathbf{o}''$ by irradiating with UV light, (b) $1\mathbf{c}''$ by irradiating with visible light.

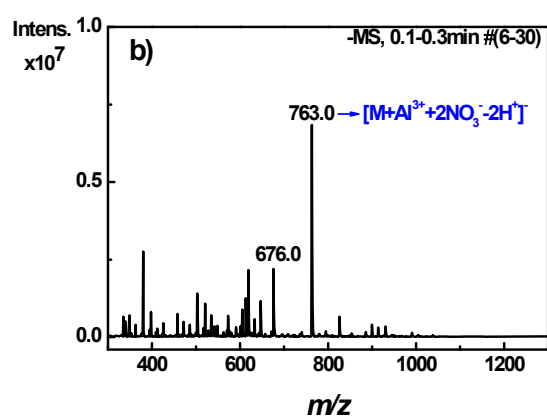
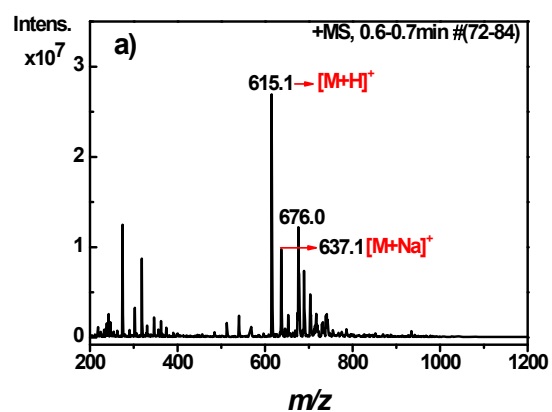


Fig. S2. ESI-MS spectrum changes of **1o** and **1o** induced by Al^{3+} in methanol.

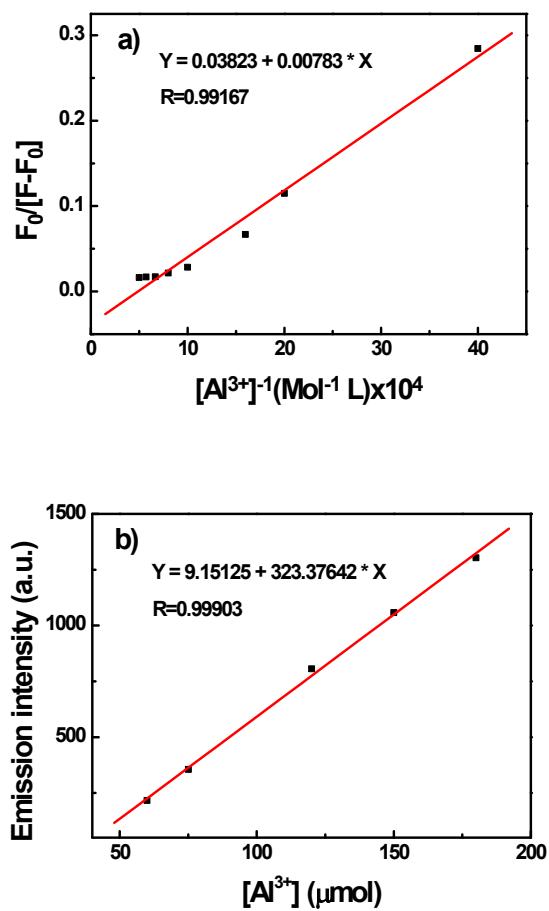


Fig. S3. (a) Hildebrand-Benesi plot based on the 1:1 for **1o** with $K_a = 4.88 \times 10^4 \text{ L mol}^{-1}$. (b) The limit of detection for **1o** with $LOD = 2.2 \times 10^{-9} \text{ mol L}^{-1}$.

2. NMR spectra

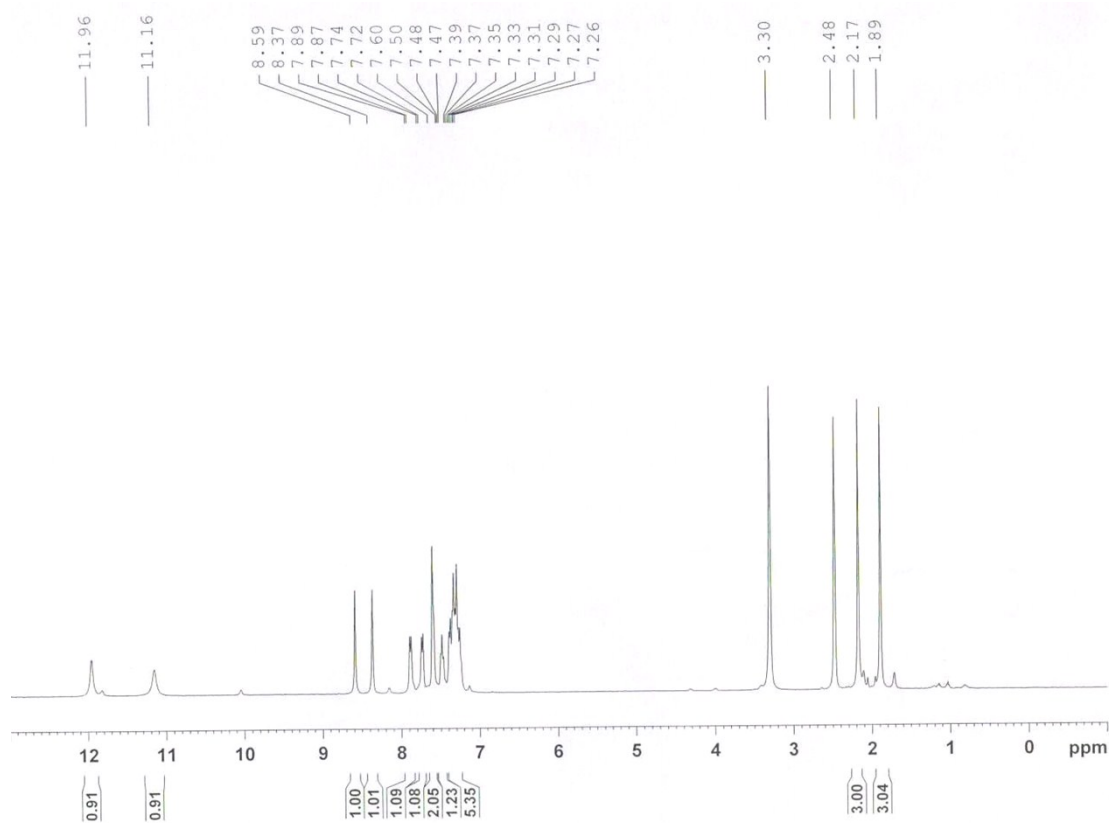


Fig. S4. ^1H NMR (400 MHz, DMSO) spectrum of **1o**.

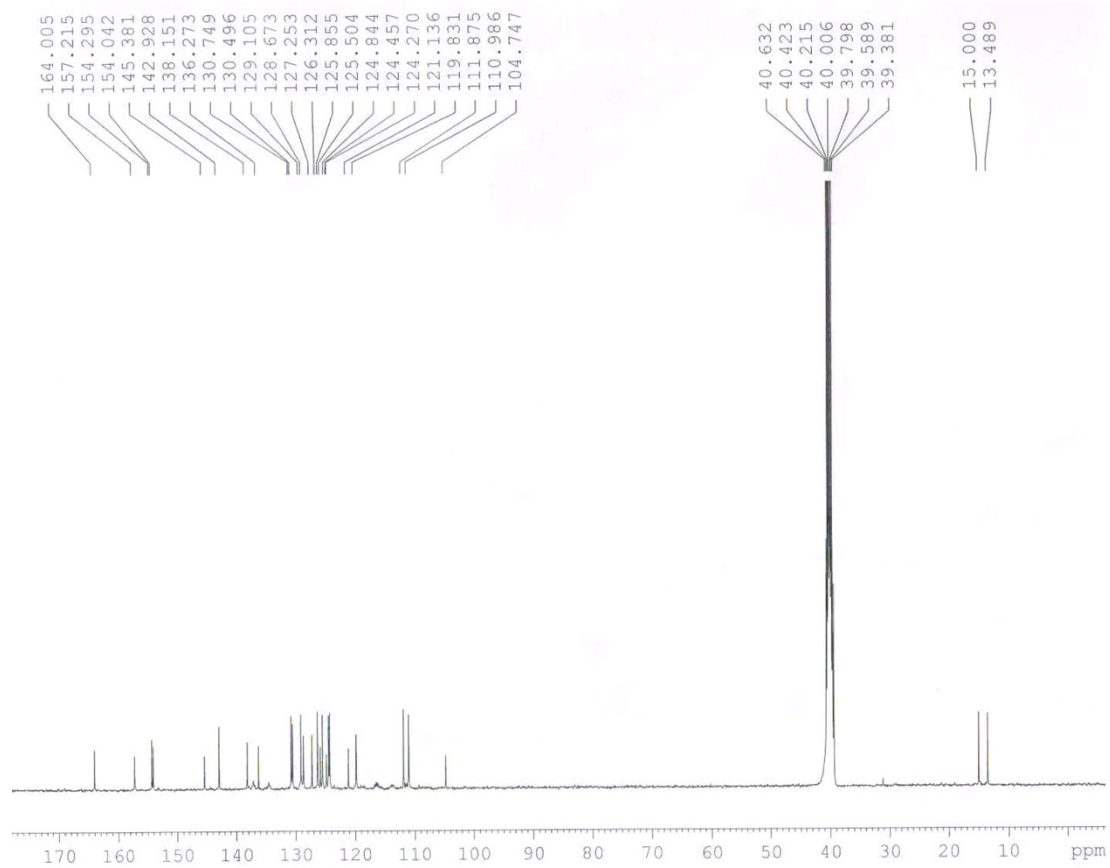


Fig. S5. ^{13}C NMR (100 MHz, DMSO) spectrum of **10**.