Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supporting information

A Cycloruthenated 2-Phenylimidazole: Chromogenic Sensor for Nitrite in Acidic buffer and Fluoride in CH_3CN

Zhen Li [a], Yirong Wang [a], Ce Xu [b], Xianghong Li [a, b, *], Bingguang Zhang [a, b]

[a] Key Laboratory of Analytical Chemistry of State Ethnic affairs Commission, South-Central Minzu University, Wuhan 430074, P. R. China.

[b] Key Laboratory of Catalysis and Energy Materials Chemistry of Ministry of Education & Hubei Key Laboratory of Catalysis and Materials Science, South-Central Minzu University, Wuhan 430074, China

[*] Corresponding author, Email: lixhchem@mail.scuec.edu.cn

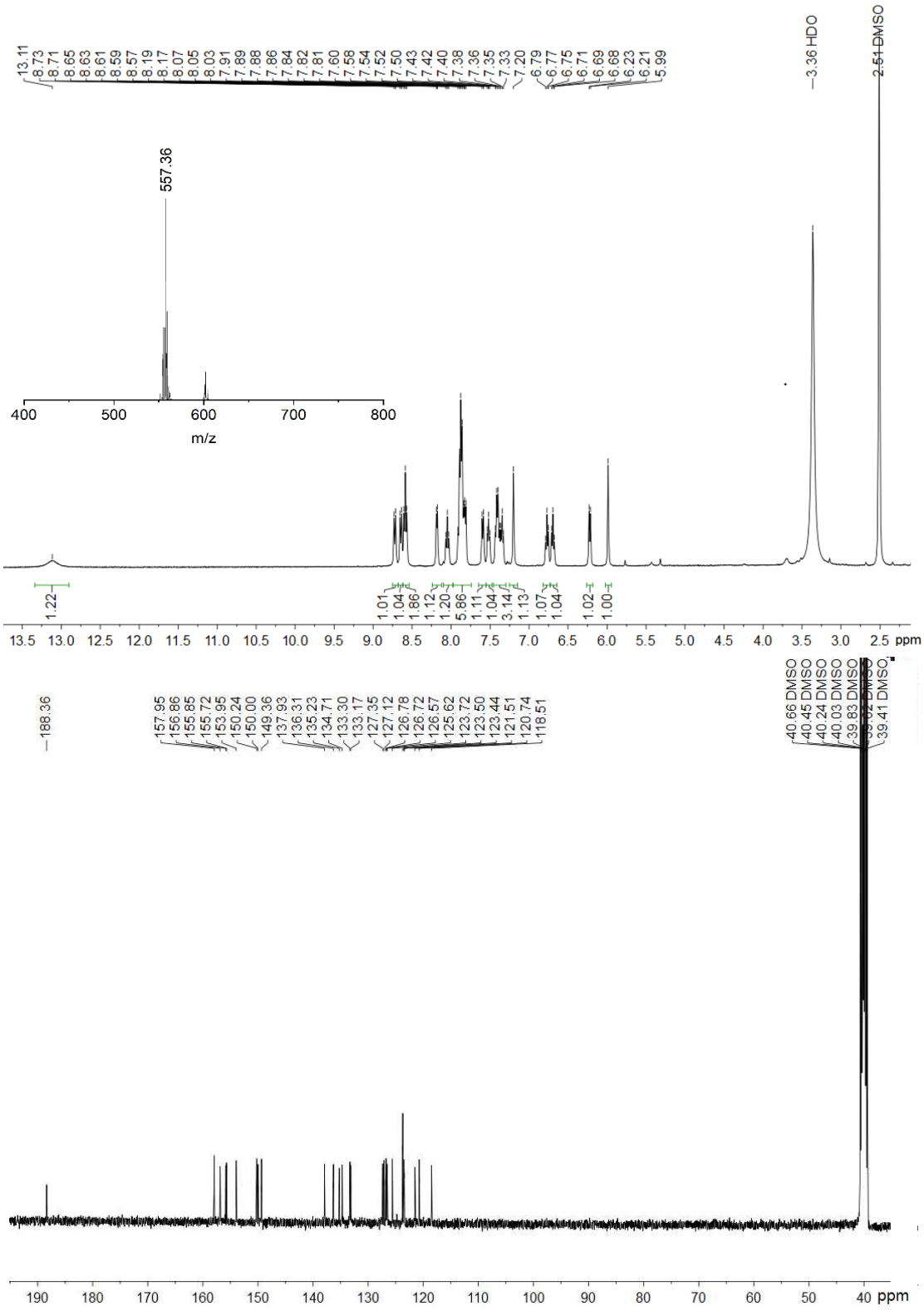

Figure S1 NMR spectra of the complex in DMSO-d_6. Inset: The MS spectra of the complex **1**

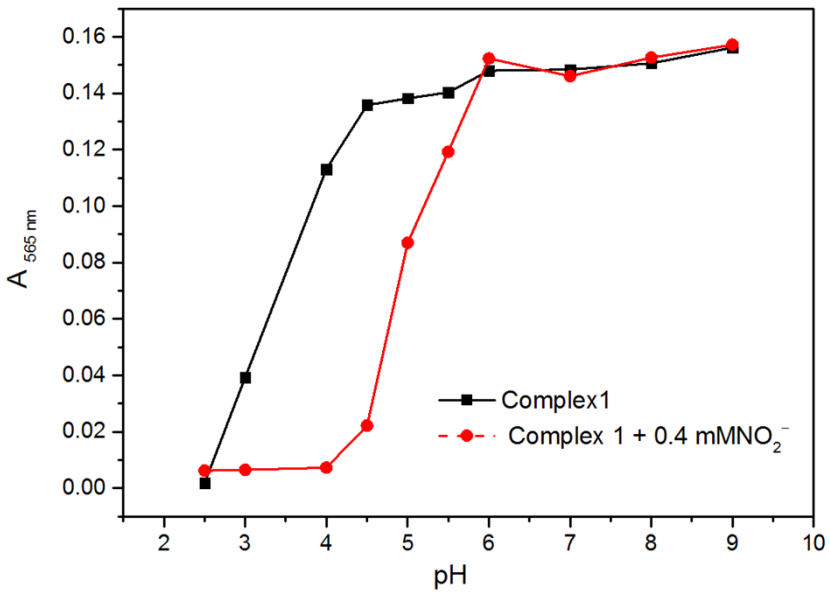

Figure S2. pH Dependence of the absorption intensity of the complex in the absence and presence of NO_2^- in CH_3CN/B-R buffer (V/V=1:9) after being incubated for 20 min.

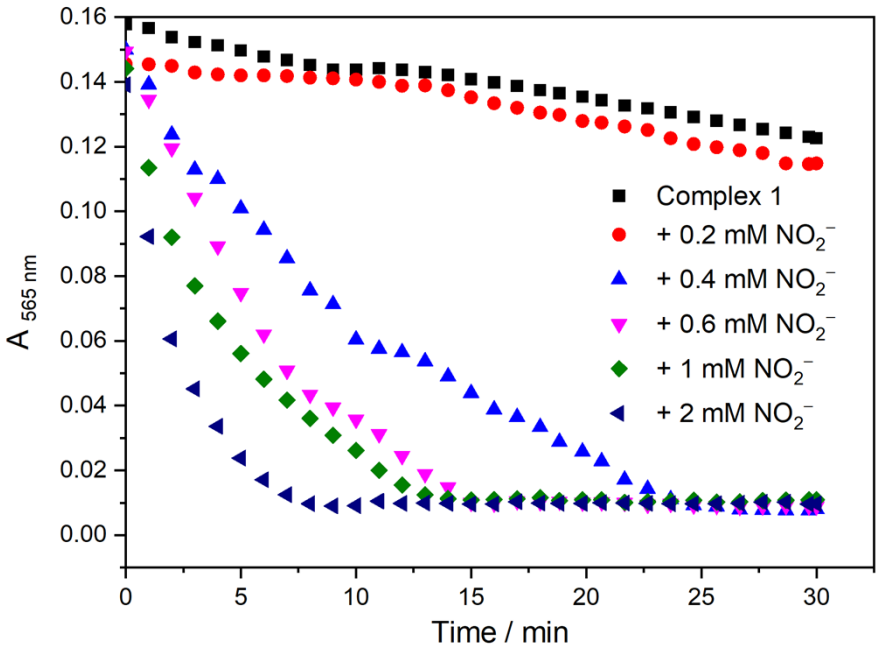

Figure S3. Time-dependent absorption intensity changes at 565 nm of the complex in CH_3CN/BR buffer (V/V=1:9, pH 4.50) upon addition of nitrite in various amounts.

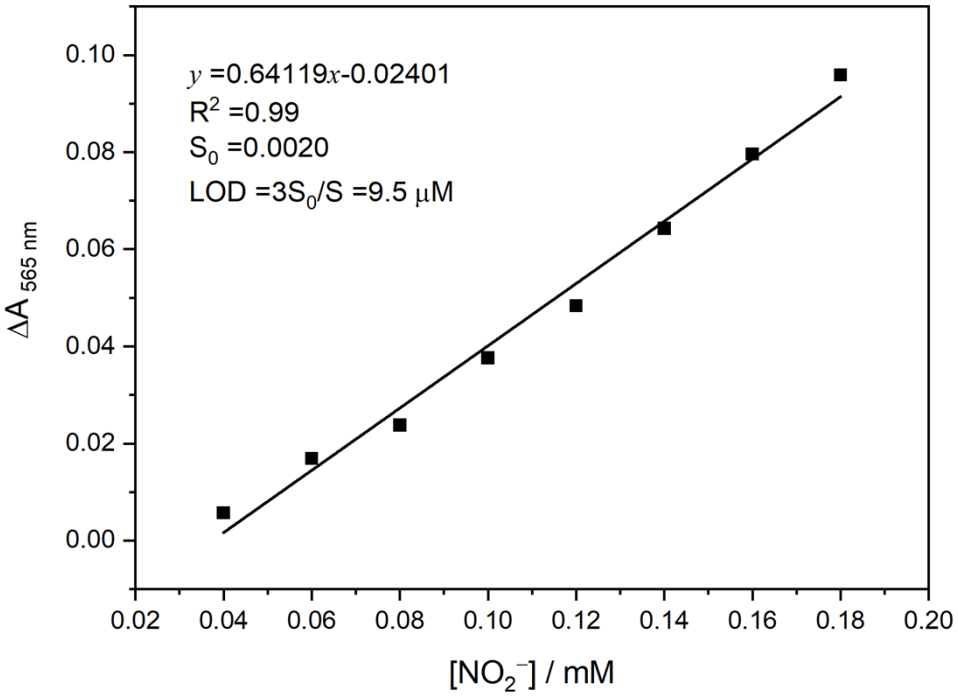

Figure S4. The linear relationship between the complex and concentrations of nitrite.

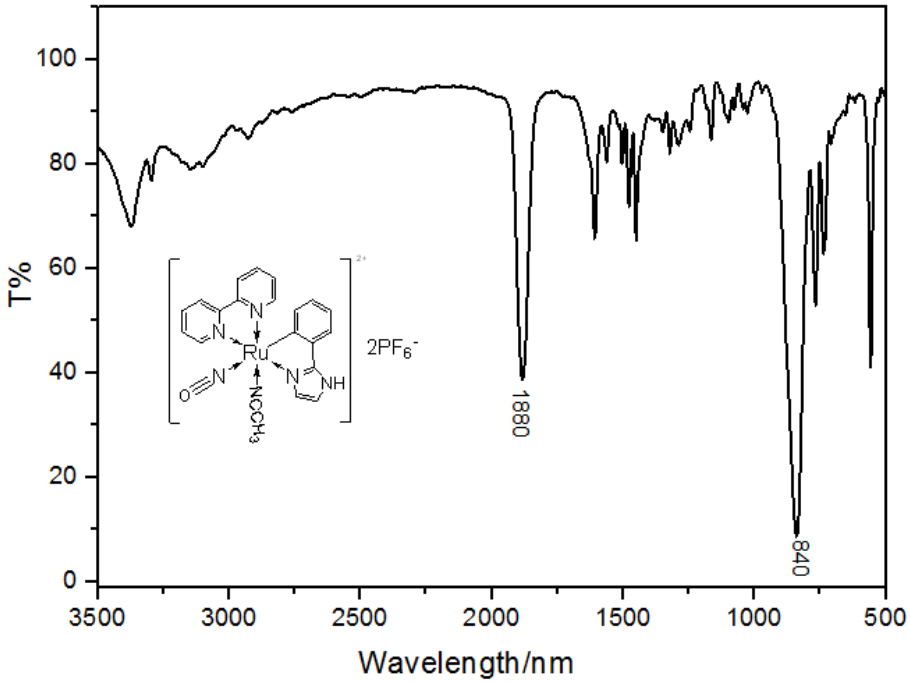

Figure S5. The FT-IR spectrum of the complex from the reaction between **1** and nitrite in acidic buffer.

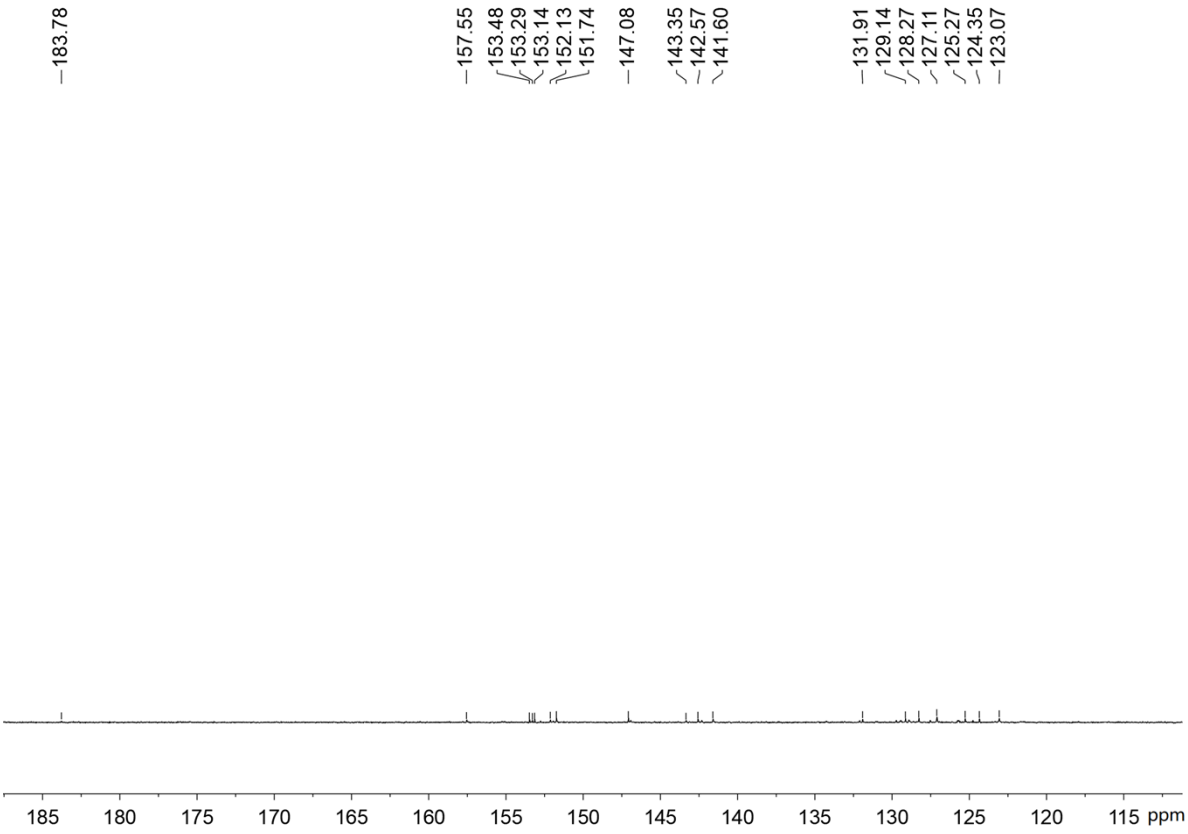

Figure S6. ^{13} CNMR spectrum of the nitrosyl complex in DMSO-d_6.

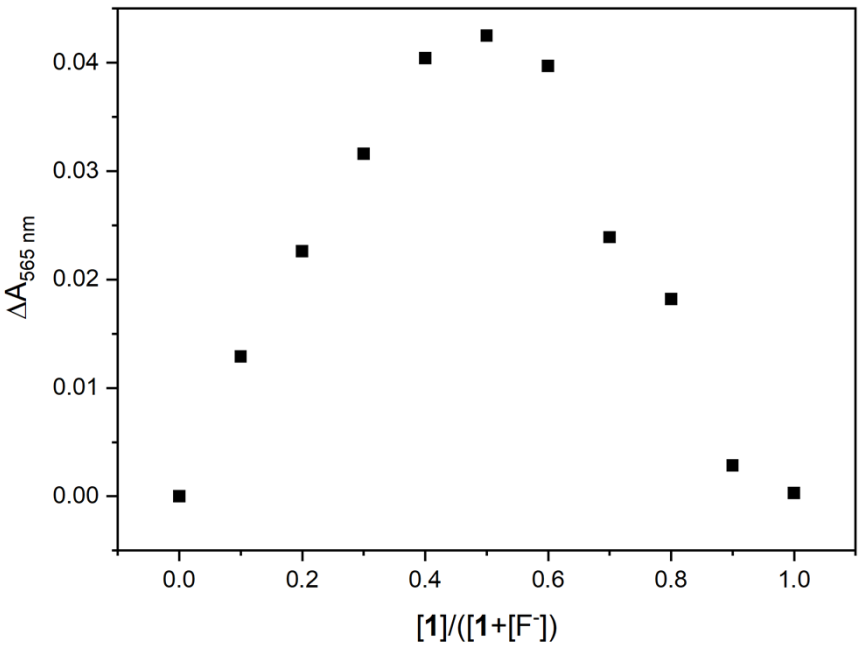

Figure S7. Job's plot for the complex **1** and F^-. Herein, [**1**]+[F^-]=4.0✓10^{-5} mol/L.

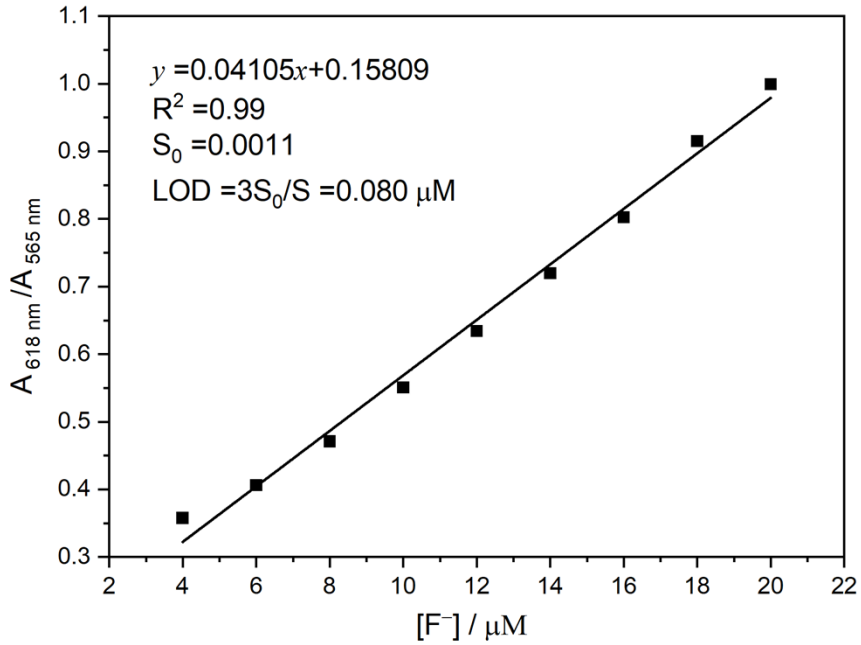

Figure S8. The sensitivity test of **1** towards F^- using UV–Vis absorption technique.

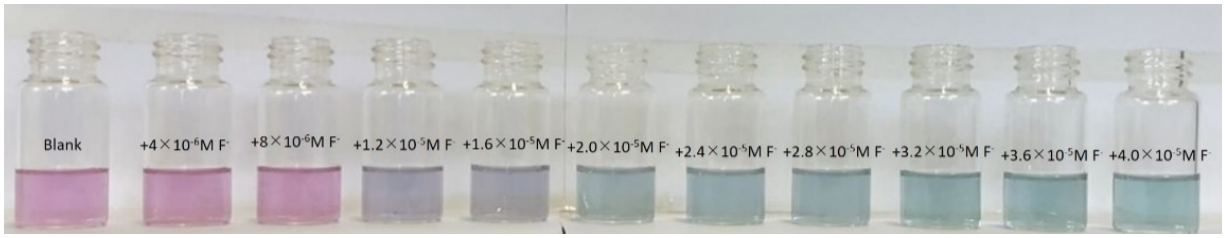

Figure S9. The photos of the complex **1** (20 μM) in CH_3CN upon addition of different concentrations of fluoride.

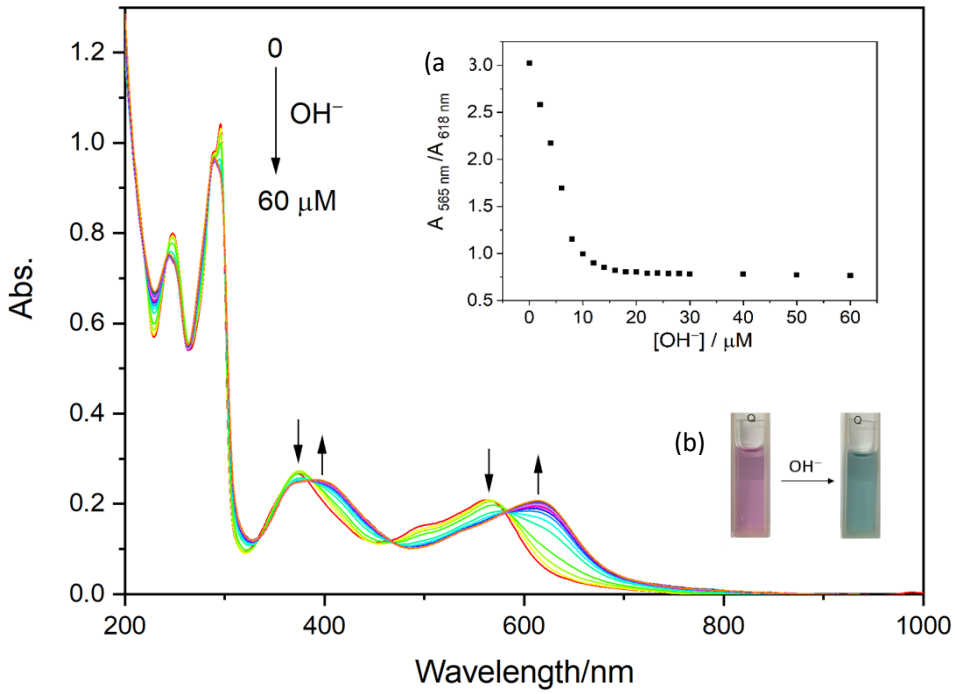

Figure S10. The absorption spectral changes of the complex **1** (20μM) in CH_3CN upon addition of hydroxide. Each spectrum was recorded in a 2 min delay. Inset: (a) The titration curve of fluoride for the complex; (b) The photograph of the complex in CH_3CN in the presence or absence of hydroxide.

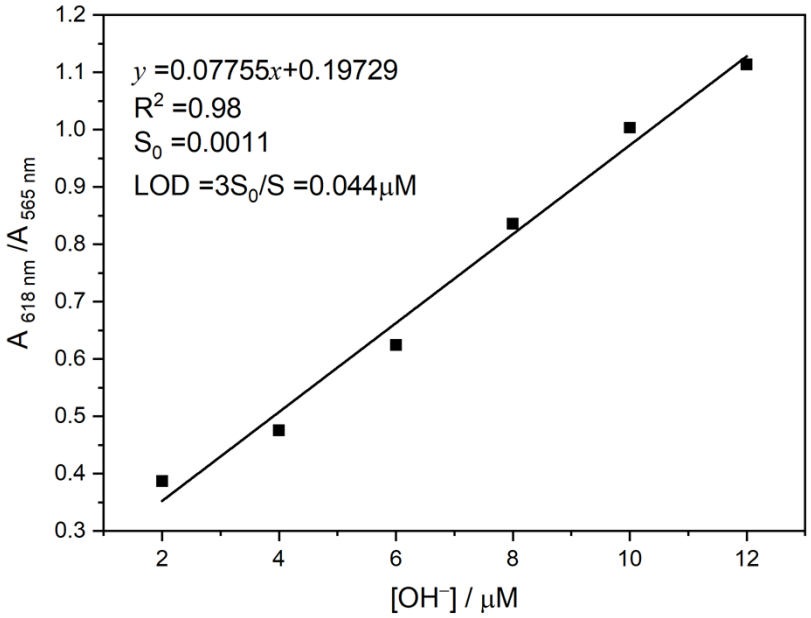

Figure S11. The sensitivity test of **1** towards OH^- using UV–Vis absorption technique.

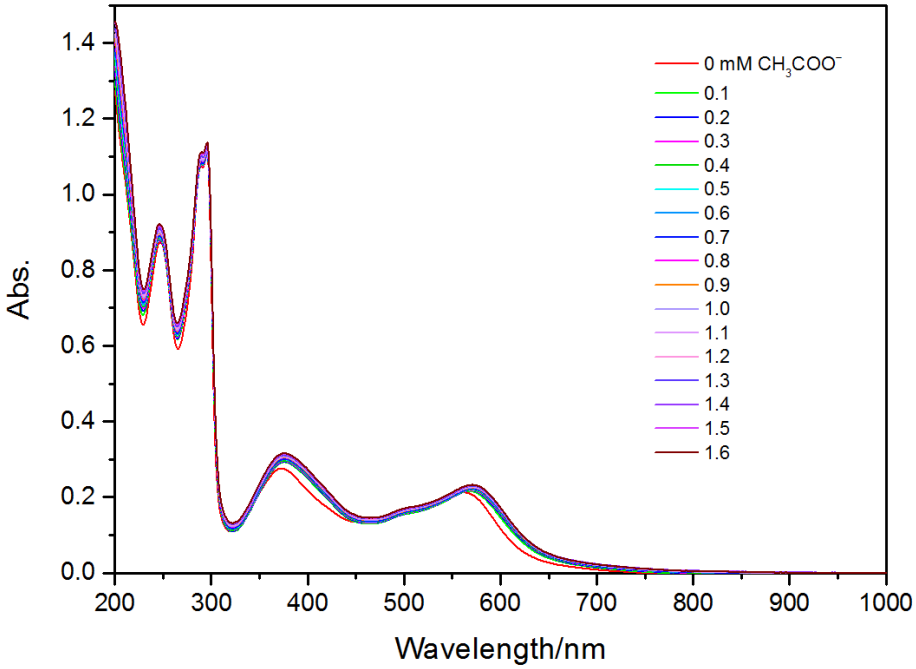

Figure S12. The absorption spectral changes of the complex 1 (20μM) in CH_3CN upon addition of hydroxide. Each spectrum was recorded in a 2 min delay.