Electronic Supplementary Material (ESI) for Analytical Methods

Supplementary Data for

A ratiometric fluorescent sensor for Ag^+ based on 8-hydroxyquinoline Platform in aqueous media

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1. Materials and instruments

All the materials and solvents were purchased from commercial suppliers and used without further purification. The solution of metal ions were prepared from chloride salts of Ni^{2+}, Fe^{3+}, Cu^{2+}, Mn^{2+}, Hg^{2+}, Na^+, Ca^{2+}, Zn^{2+}, Mg^{2+}, Pb^{2+}, K^+, Co^{2+}, Li^+, Cd^{2+}, Cr^{3+}, Al^{3+}, Sr^{2+}, Ba^{2+} ,and nitrate salts of Ag^+. Stock solutions of metal ions (20 mM) were prepared in deionized water.

A stock solution of **L** (200 μM) was prepared in CH_3CN. In selectivity experiments, the test samples were prepared by appropriate amount of metal ion stock into 3 ml solution of **L (**100 μM**).** Fluorescence spectra measurements were performed on a Cary Eclipse fluorescence spectrophotometer. ^{1}H NMR spectra were recorded on a Varian INOVA-400 MHz spectrometer with tetramethylsilane (TMS) as internal standard.

2. Synthesis and characterization of L

A solution of 8-Hydroxyquinoline-2-carboxaldehyde (0.34 g, 2 mmol) and 4 **1**-Aminohydantoin hydrochloride (0.30 g , 2 mmol) in 20 mL ethanol was stirred at 50 ℃ for 2 h. After completion of the reaction, the obtained yellow precipitate was filtered and washed several times with cold ethanol. After drying under reduced pressure, the reaction afforded 0.52 g (82%) as a yellow solid .^{1}H NMR（400 MHz, d_6-DMSO）δ: 11.57 (s, 1H), 10.55 (s, 1H), 8.46 (d, J = 8.4 Hz, 1H), 8.06 (s, 1H), 7.97 (d, J = 8.4 Hz, 1H), 7.45-7.52 (m, 2H), 7.20 (d, J = 7.2 Hz, 1H), 4.52

(s, 2H). ^{13}C NMR (100 MHz, d_6-DMSO) δ 168.64, 153.24, 151.70, 150.29, 139.86, 139.64, 134.44,129.06, 128.89, 117.99, 117.55, 113.77, 48.85. ESI-MS: ($[M + H]^+$), 272.208.

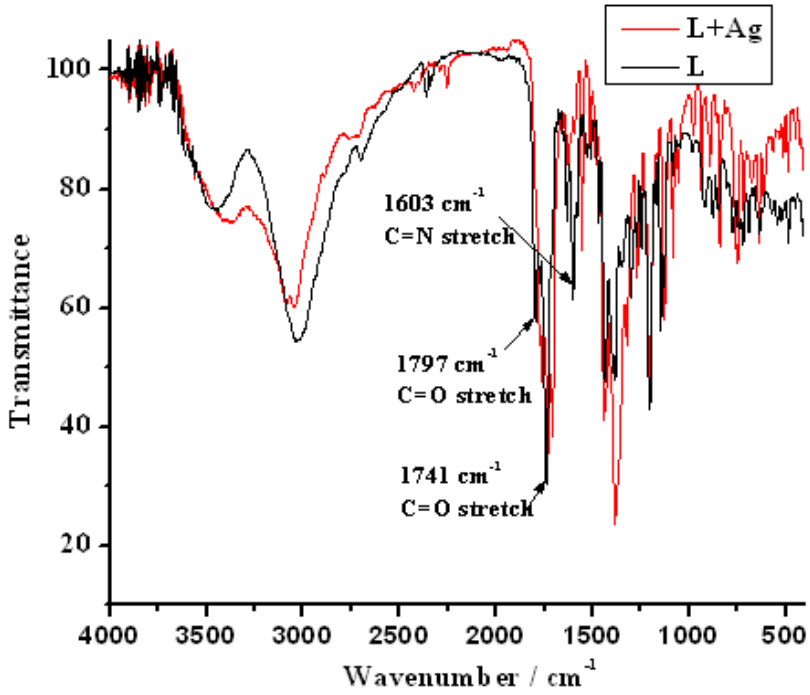

Fig. S1 IR spectra of L and L-Ag^+.