Supporting information for

Rhodamine 6G hydrazone with coumarin unit: a novel single-molecule multianalyte (Cu^{2+} and Hg^{2+}) sensor at different pH value

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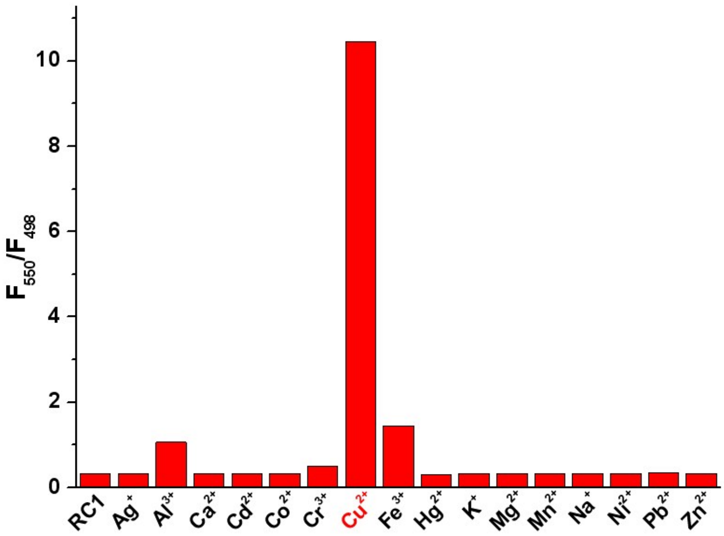

Fig. S1 The influence of tested ions on the fluorescence intensity ratio at 550 and 498 nm (F_{550}/F_{498}) of **RC1**in CH_3CN/H_2O (9/1, v/v, pH = 7.4) solution, excitation wavelength was 445 nm.

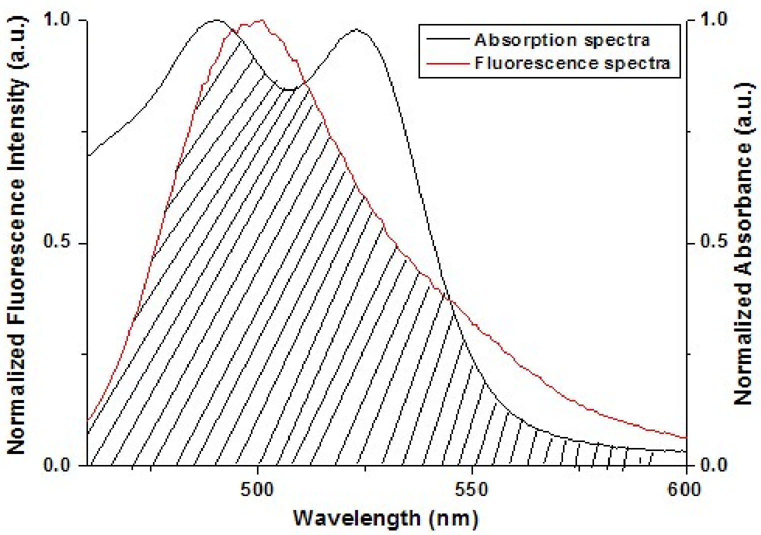

Fig. S2 The overlap (shown with vertical stripes) between emission and absorption spectra of the donor and acceptor, respectively.

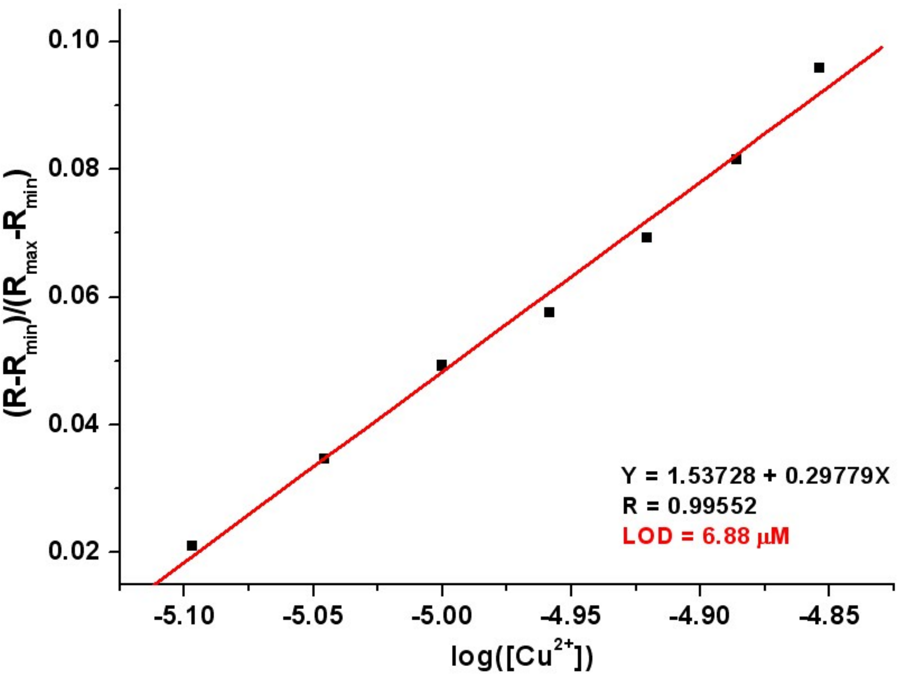

Fig. S3 Normalized response of fluorescence ratio calibration value ($R=F_{550}/F_{498}$) for **RC1** as a function of Cu^{2+} concentration in CH_3CN/H_2O (9/1, v/v, pH = 7.4) solution.

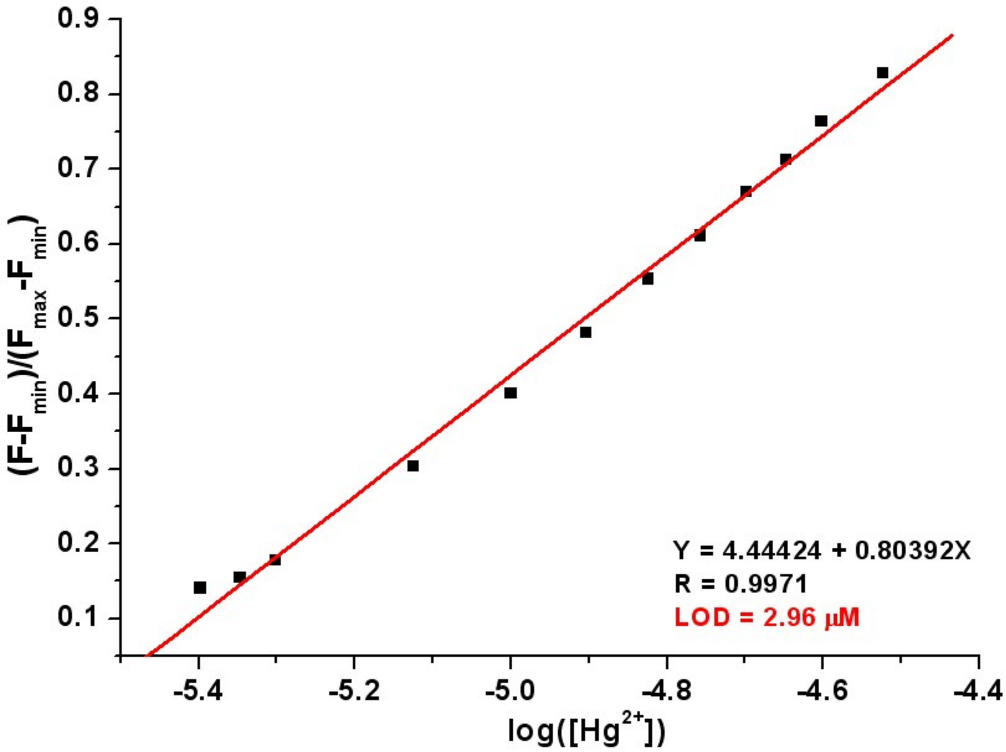

Fig. S4 Normalized response of fluorescence calibration value (intensity at 498 nm) for **RC1** as a function of Hg^{2+} concentration in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution.

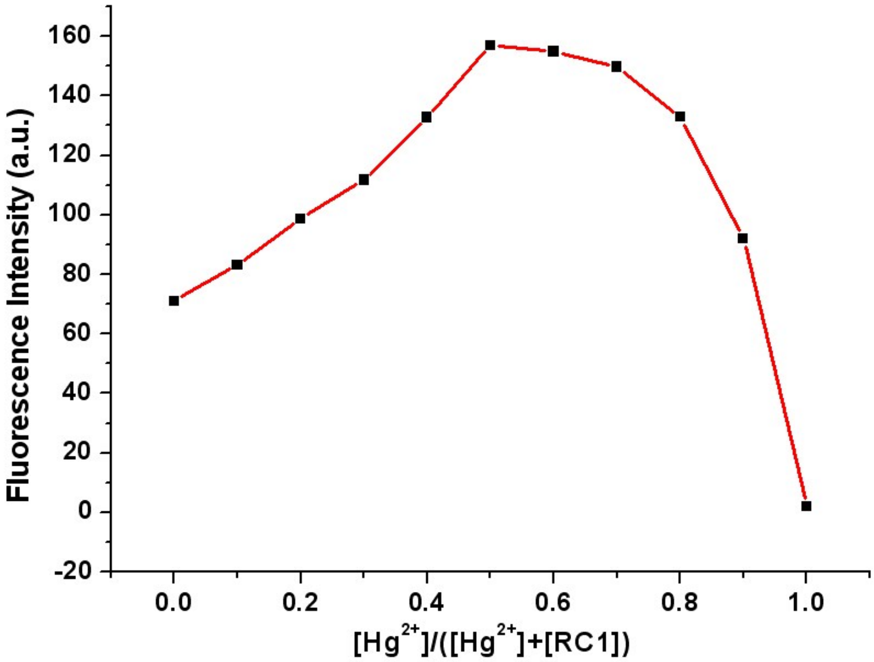

Fig. S5 Job plots of **RC1** and Hg^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution. The total concentration of **RC1** and Hg^{2+} were all kept at 5 μM.

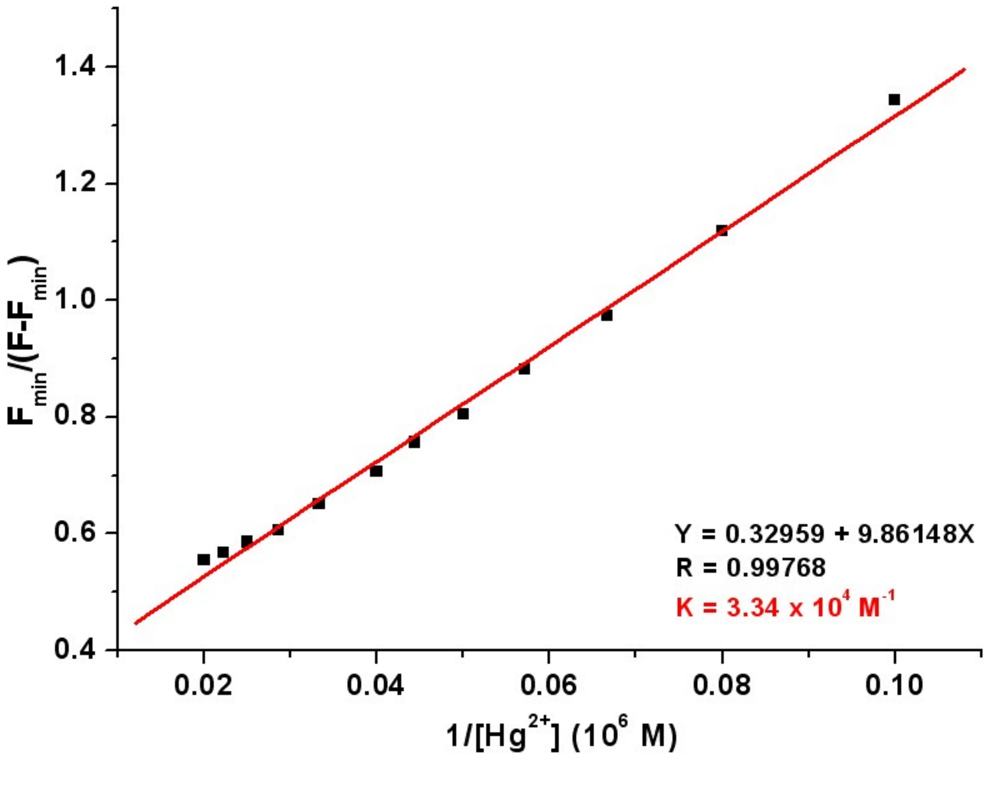

Fig. S6 The Benesi-Hildebrand plot of the **RC1**-Hg^{2+} complex based on fluorescence intensity at 498 nm.

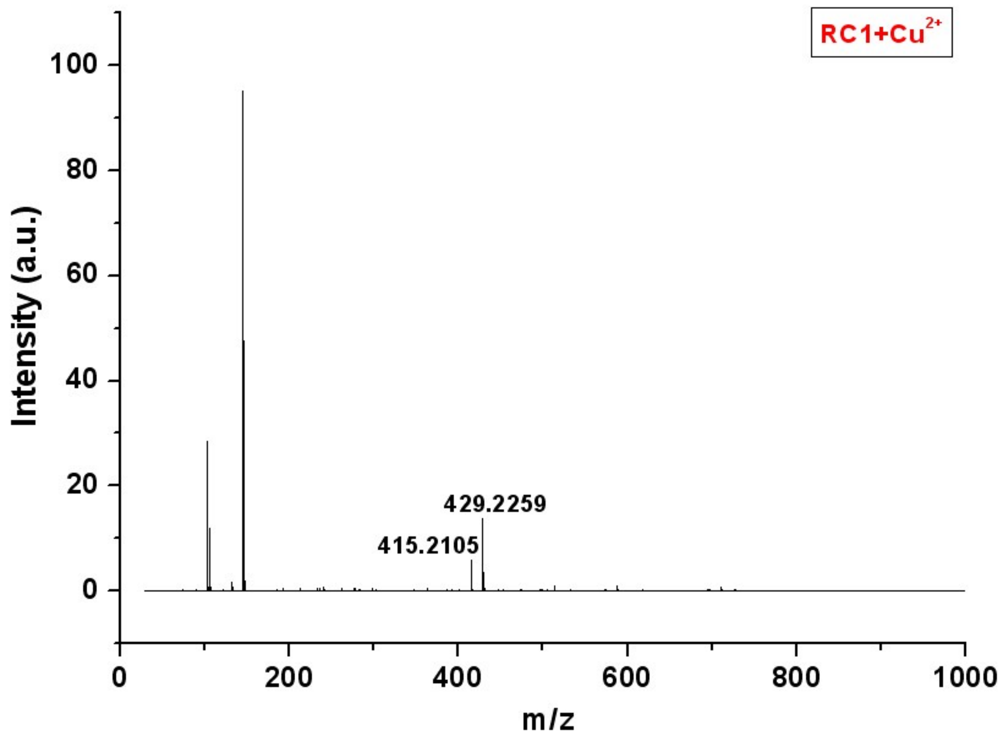

Fig. S7 ESI-MS spectrum of the sensor **RC1** with Cu^{2+} in CH_3CN solution.

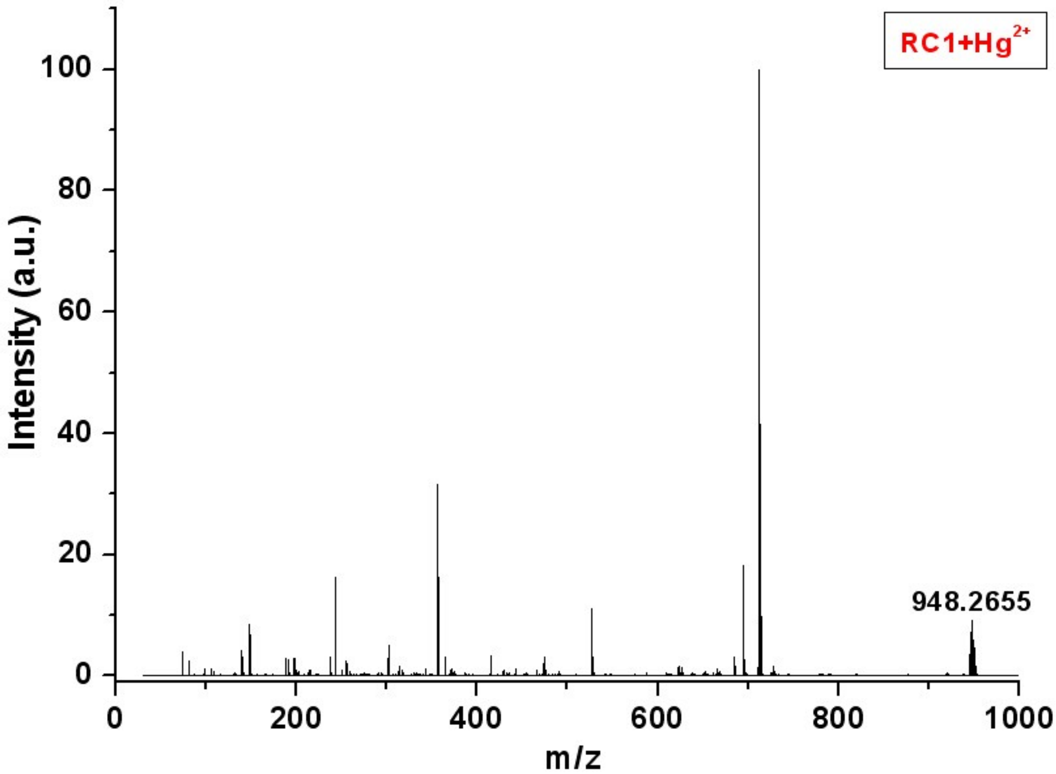

Fig. S8 ESI-MS spectrum of the sensor **RC1** with Hg^{2+} in CH_3CN solution.

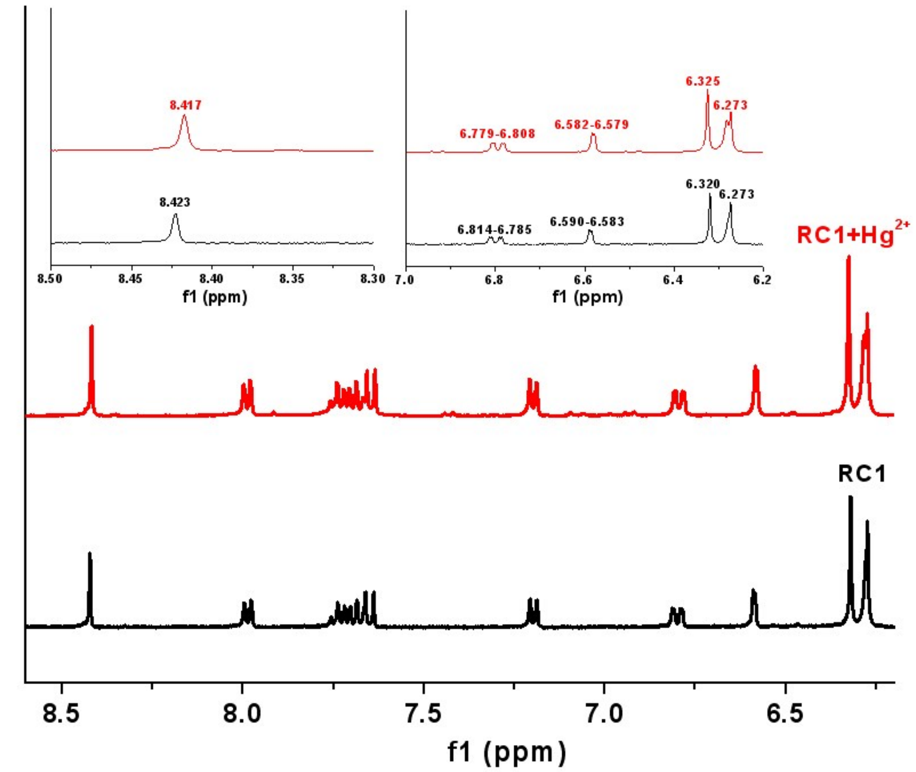

Fig. S9 Partion of ^{1}H NMR spectrum of the sensor **RC1** with and without Hg^{2+} in DMSO-d_6 solution.

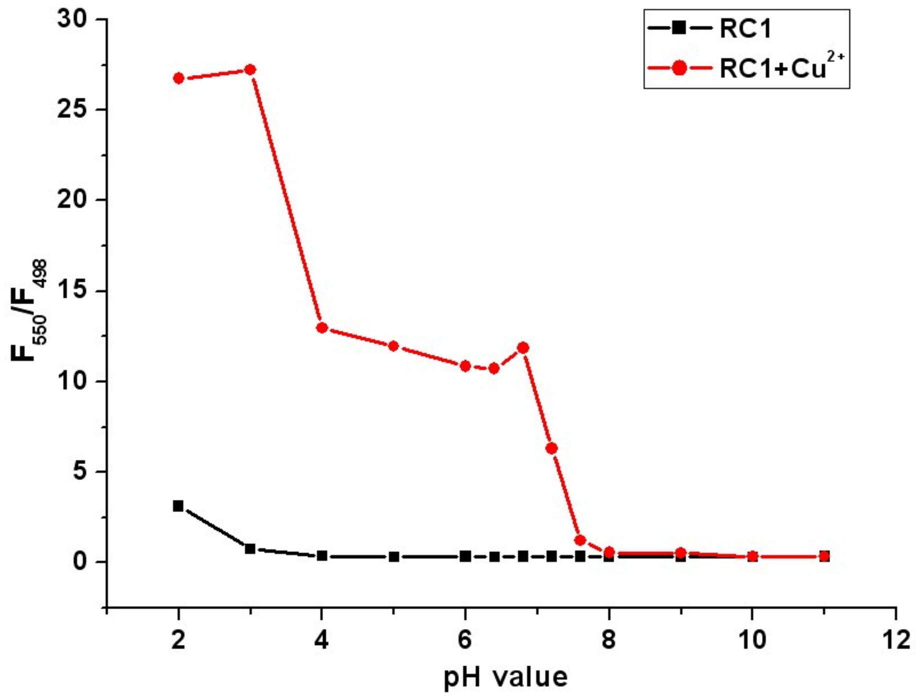

Fig. S10 The effect of pH (2.0-11.0) on the fluorescence ratio (F_{550}/F_{498}) of 5 μM probe **RC1** with 5 equiv. Cu^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 7.4) solution.

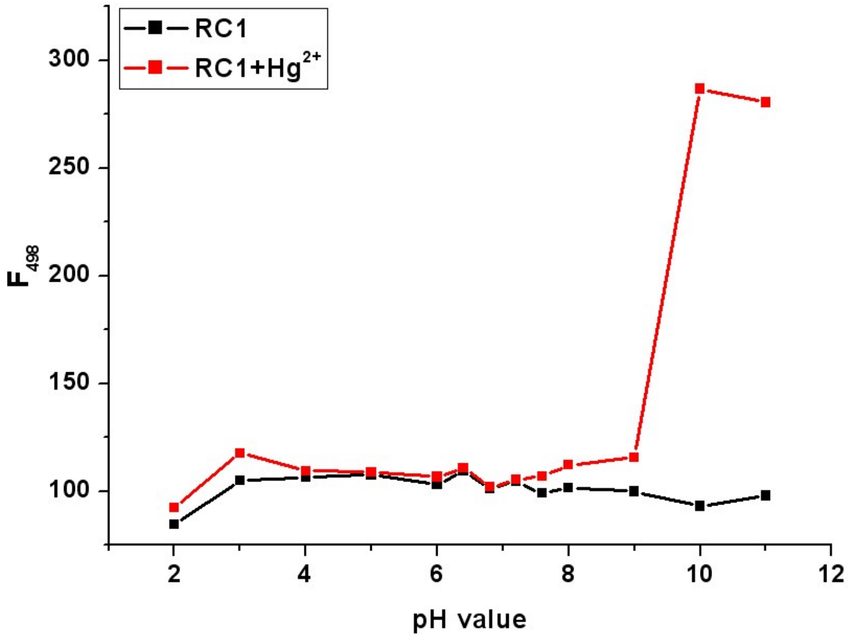

Fig. S11 The effect of pH (2.0-11.0) on the relative fluorescence intensity of 5 μM probe **RC1** with 5 equiv. Hg^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution.

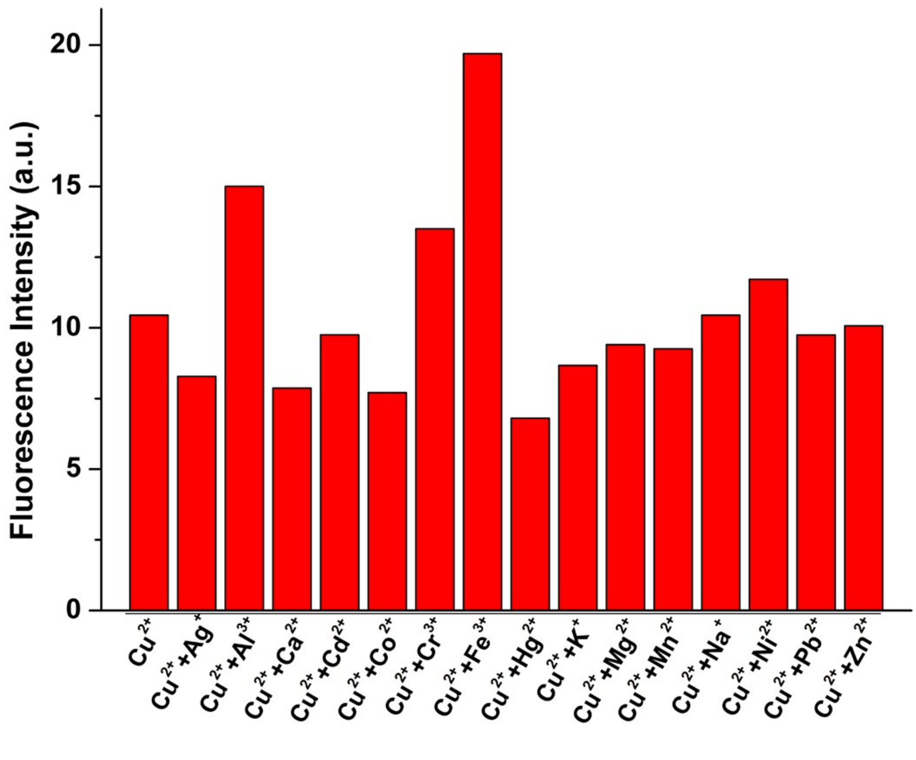

Fig. S12 The effect of 5 equiv. coexistent metal cations on the relative fluorescence intensity of 5 μM **RC1** with 5 equiv. Cu^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 7.4) solution.

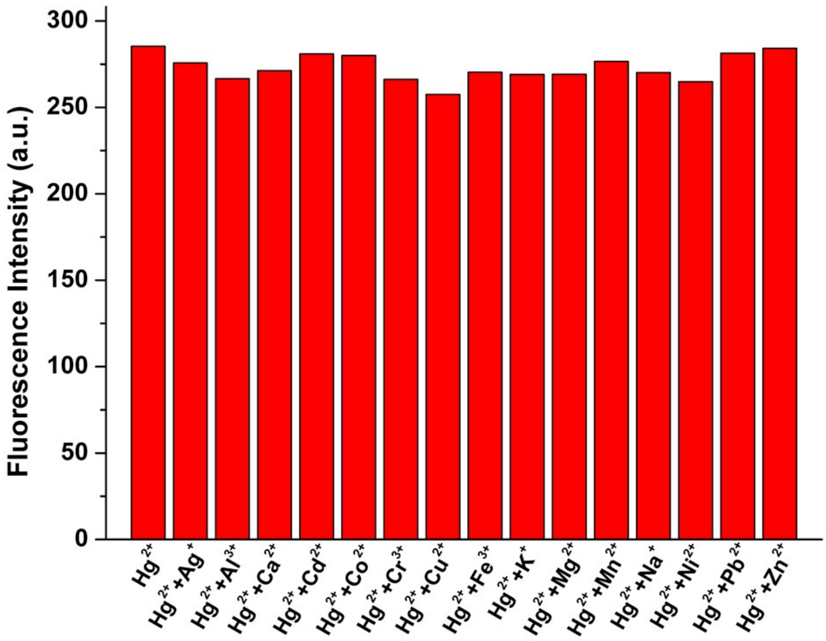

Fig. S13 The effect of 5 equiv. coexistent metal cations on the relative fluorescence intensity of 5 μM **RC1** with 5 equiv. Hg^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution.

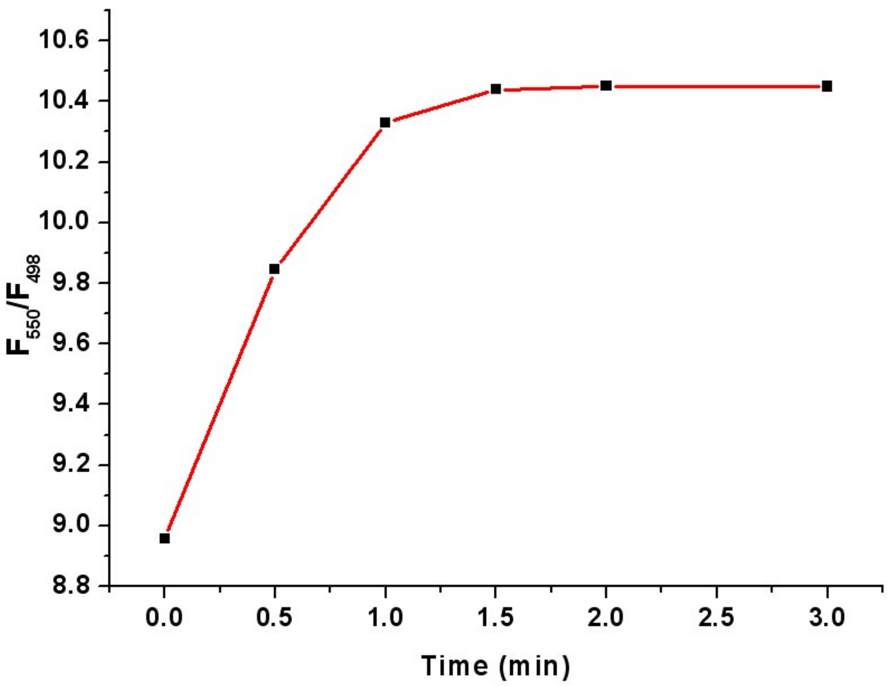

Fig. S14 Time course for the fluorescence ratio change (F_{550}/F_{498}) of 5 μM **RC1** upon the addition of 5.0 equiv. Cu^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 7.4) solution at room temperature.

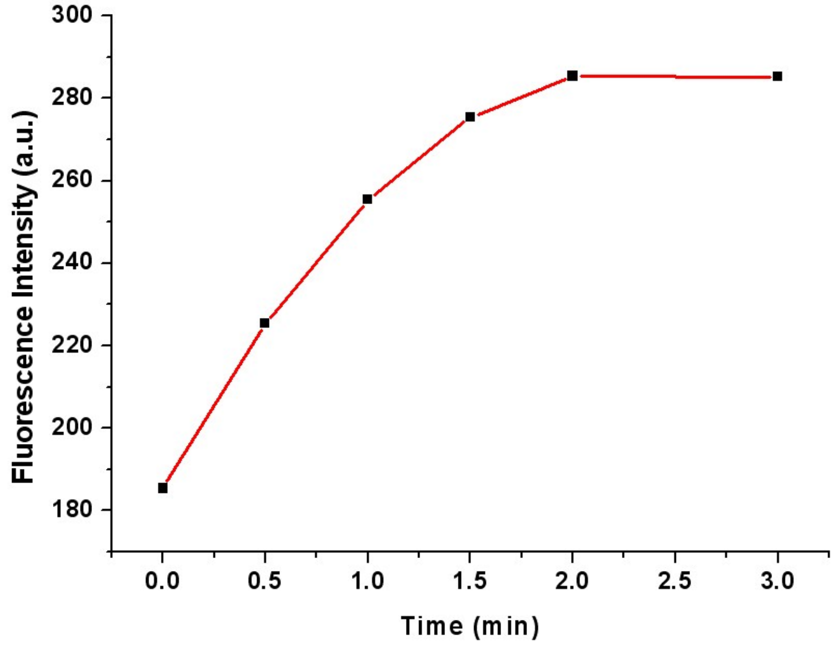

Fig. S15 Time course for the fluorescence response at 498 nm of 5 μM **RC1** upon the addition of 5.0 equiv. Hg^{2+} in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution at room temperature.

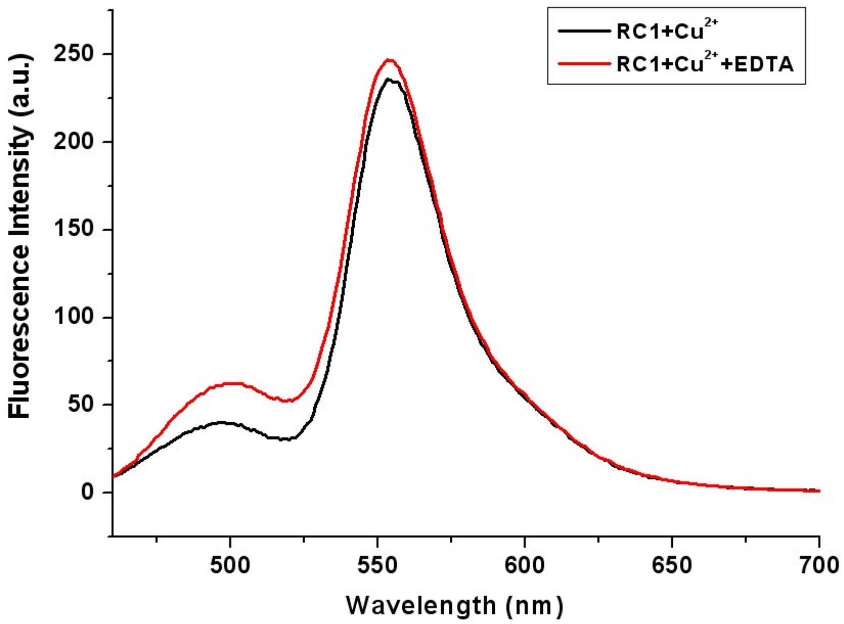

Fig. S16 Fluorescence response of Cu^{2+} ions (5 eq.) to the sensor **RC1** (5 μM) with and without Na_2EDTA (5 eq.) in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution.

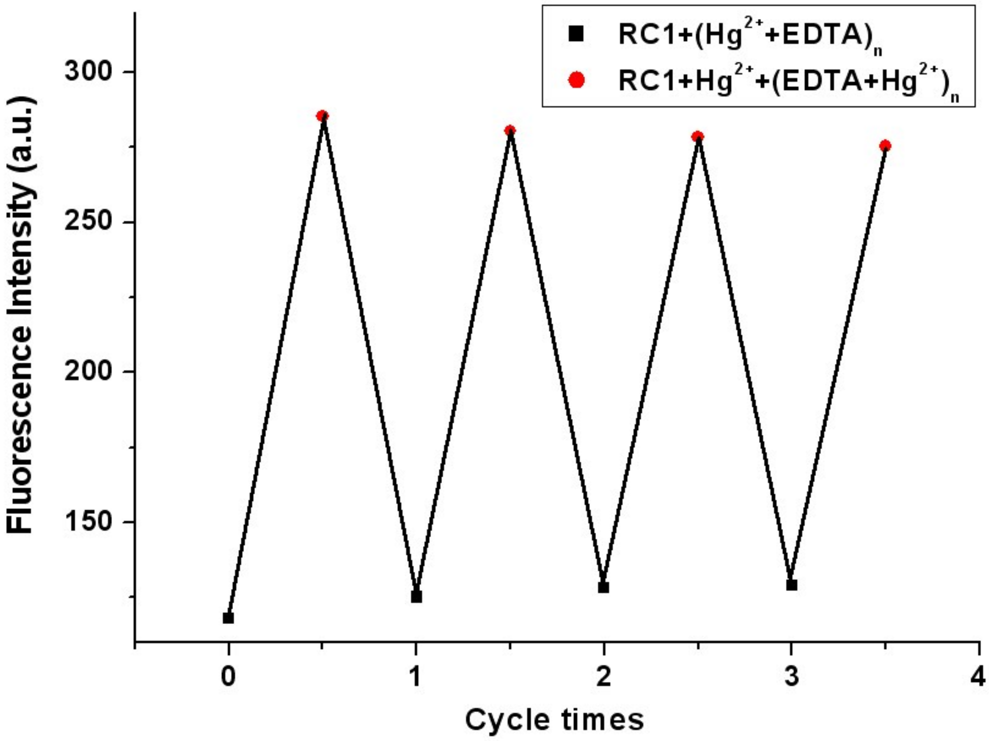

Fig. S17 Fluorescence intensity changes (490 nm) of R**C1** (5 μM) upon alternating addition of Hg^{2+} (5 eq.)/EDTA (5 eq.) in CH_3CN/H_2O (9/1, v/v, pH = 10.0) solution.

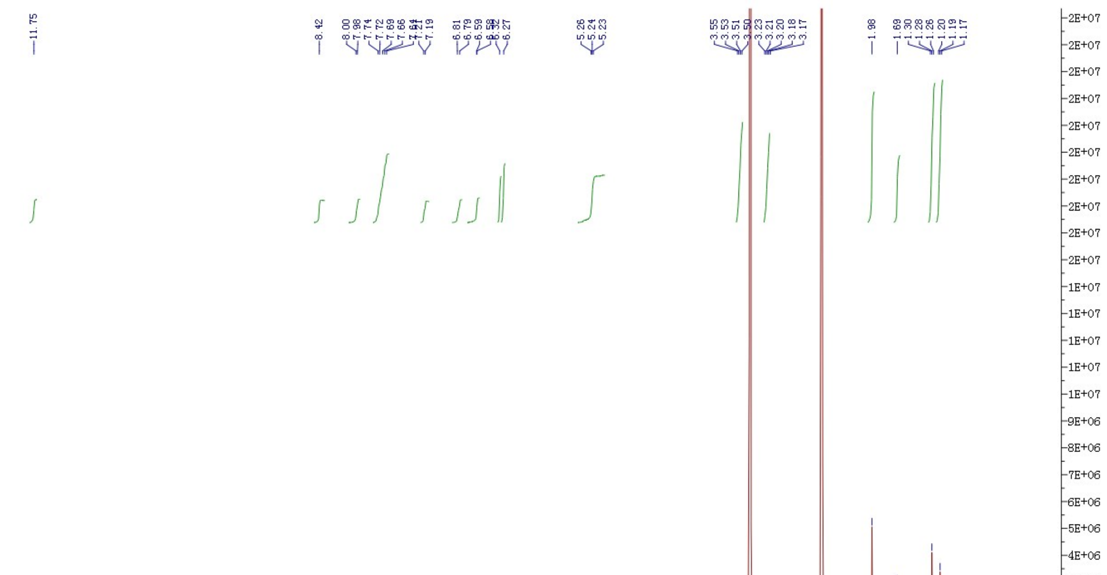

Fig. S18 ^{1}H NMR spectrum of **RC1** in DMSO-d_6 solution.

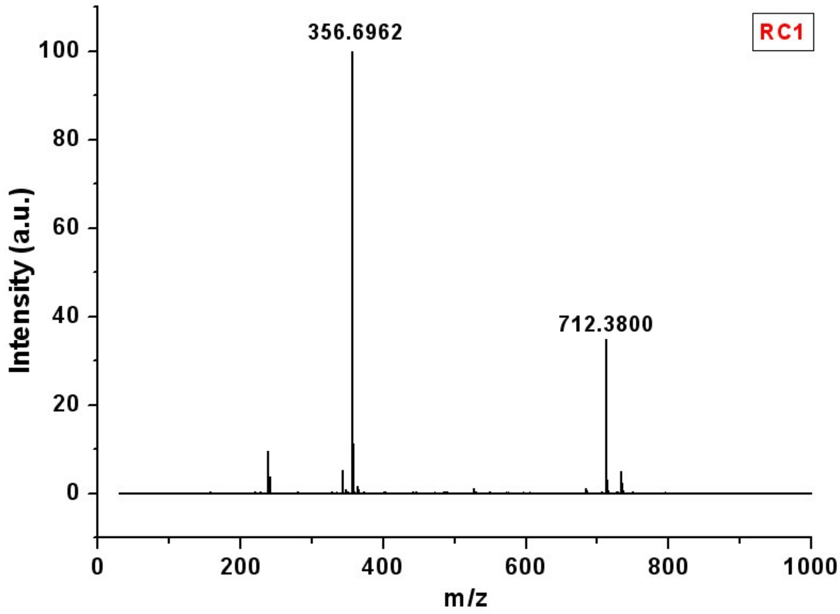

Fig. S19 ESI-MS spectrum of **RC1** in CH_3CN solution.