Supporting Information

A Bright Water-compatible Sugar-Rhodamine Fluorescence Sensor for Selective Detection of Hg^{2+} in Natural Water and Living Cells

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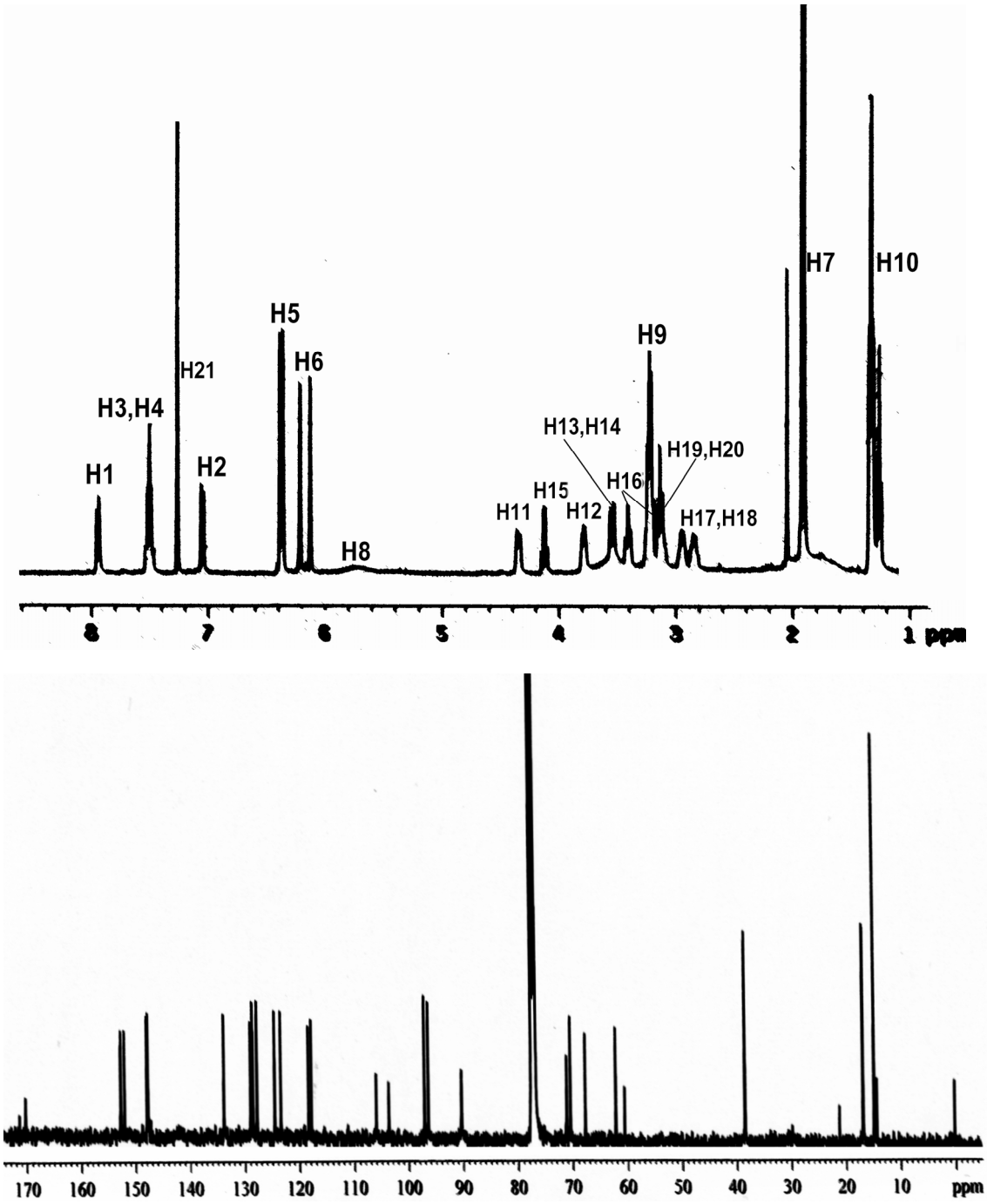

Figure S1. The ^{1}H NMR and ^{13}C NMR spectra of compound **RG1**

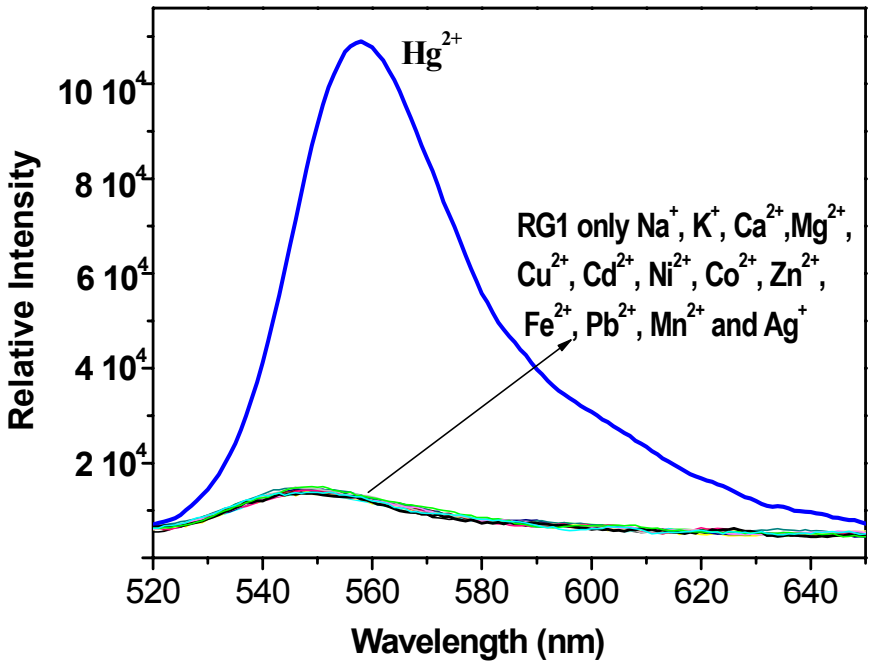

Figure S2. Emission spectra of **RG1** (10 μM) in aqueous solution in the presence of 0.2 mM of Na^+, K^+, Ca^{2+} and Mg^{2+}, 0.1 mM Hg^{2+} and 0.1 mM of the other cations interest (excitation at 500 nm).

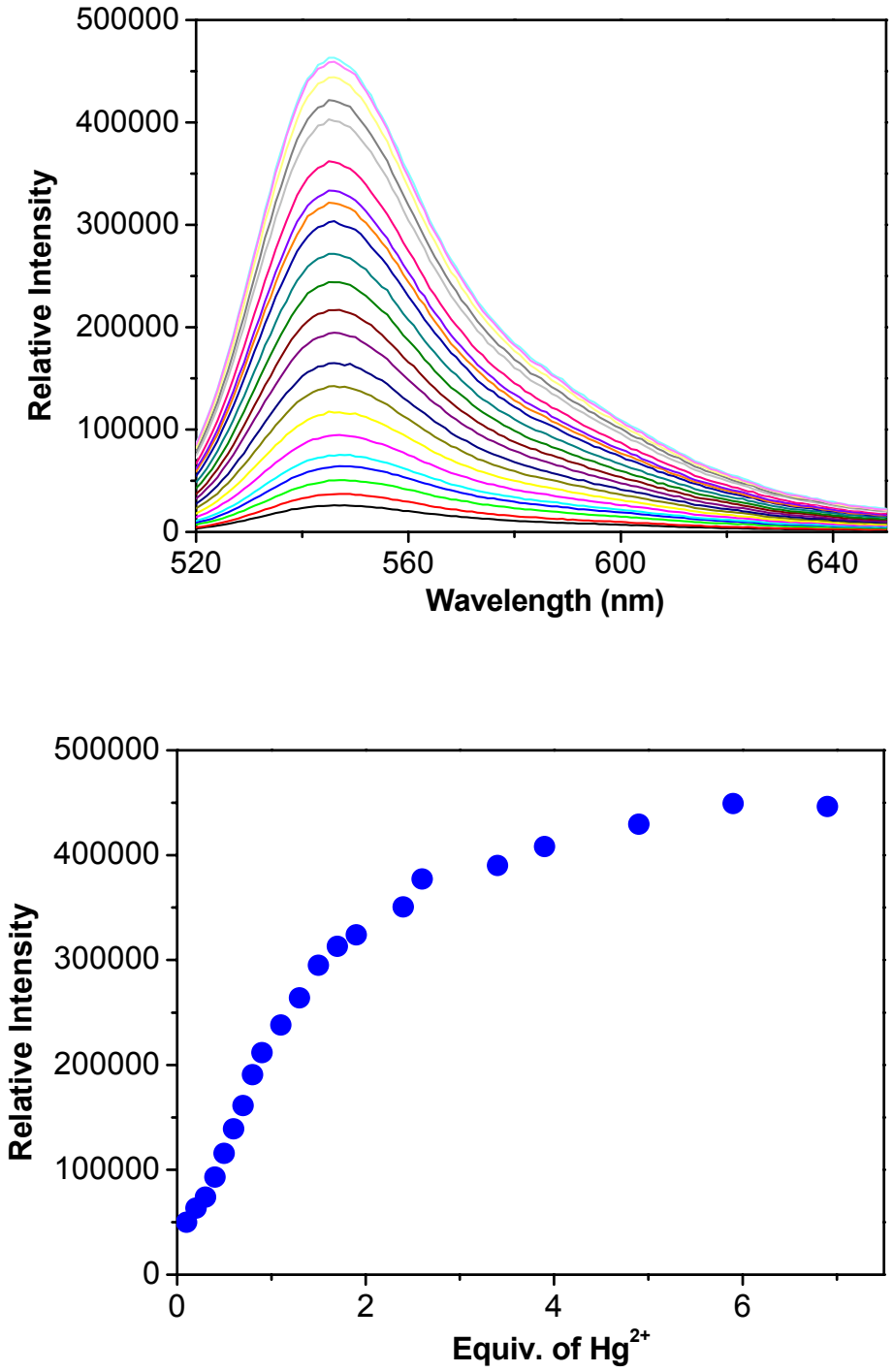

Figure S3. Top Picture: The fluorescence emission changes and the titration profile of compound **RG1** (1 μM) upon addition of $Hg(NO_3)_2$ in the presence of Cu^{2+}(10μM). Excitation was 500nm, and the emission intensities were recorded at 550nm in the presence of 100 mM KNO_3, at 25 ºC.

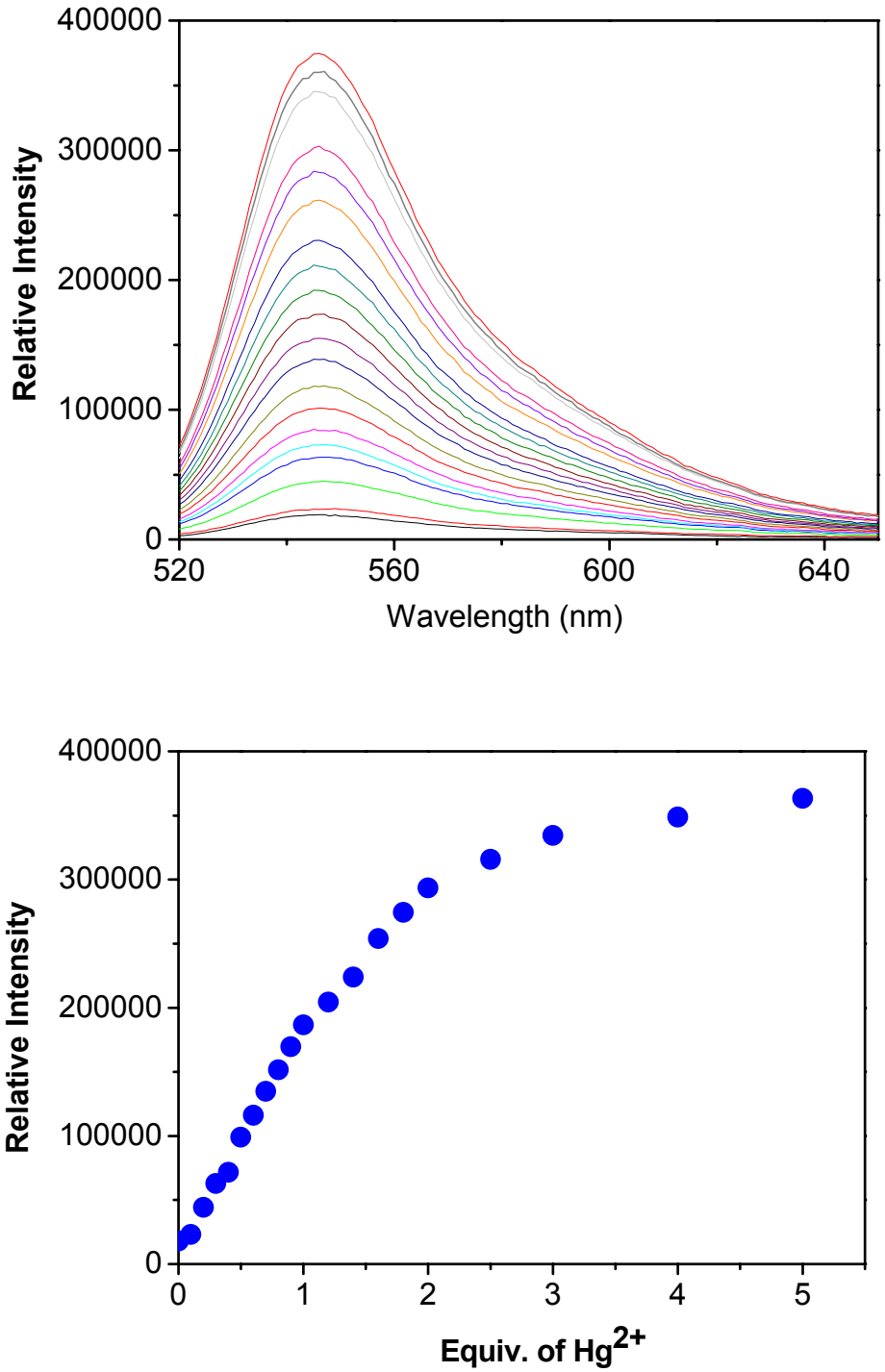

Figure S4. Top Picture: The fluorescence emission changes the titration profile of compound **RG1** (1 μM) upon addition of $Hg(NO_3)_2$ in the presence of Pb^{2+}(10μM). Excitation was provided at 500nm, and the emission intensities were integrated at 550nm in the presence of 100 mM KNO_3, at 25 ºC.

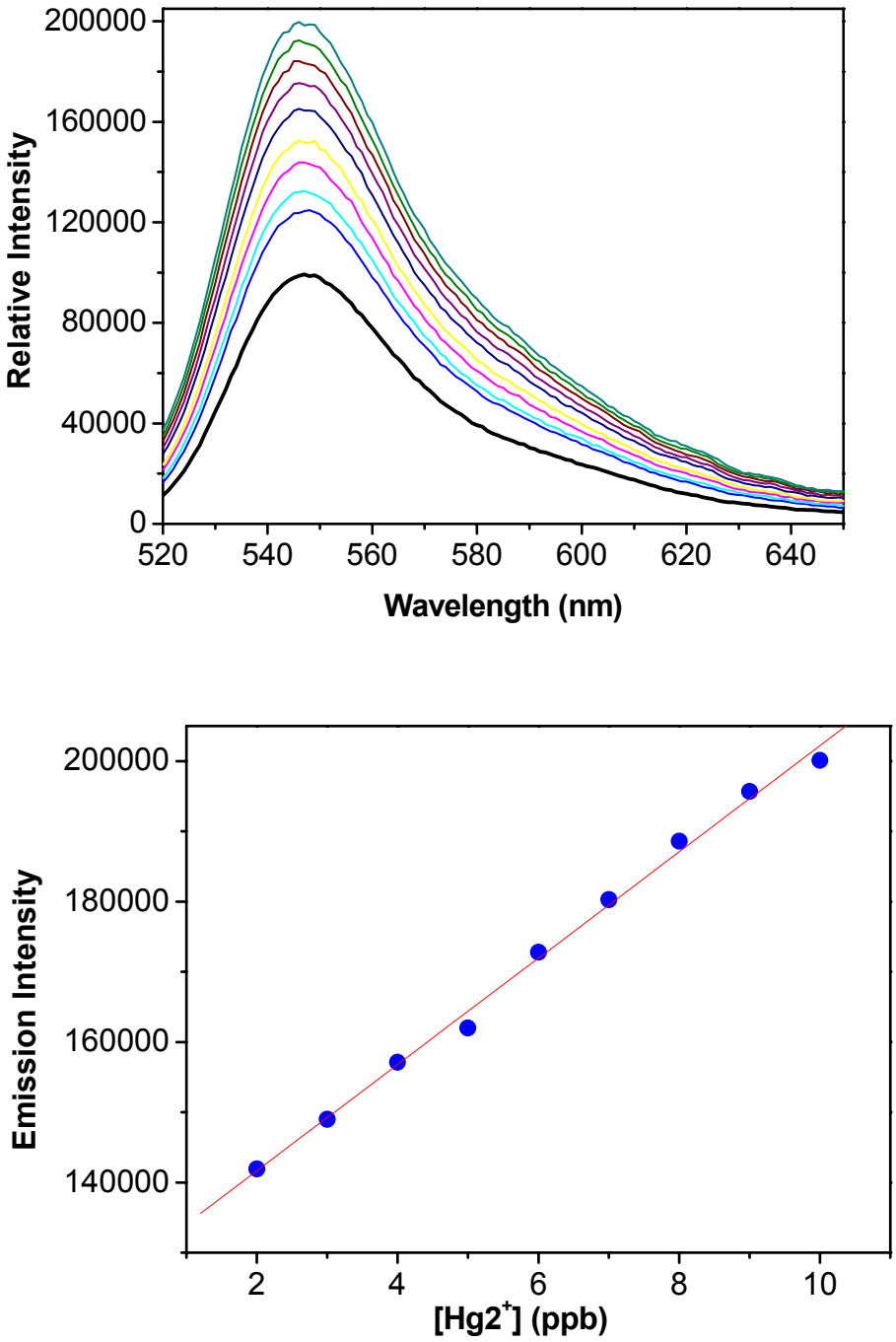

Figure S5. Top picture: The fluorescence emission changes of compound **RG1** (0.1 μM) in pure laboratory water (LW) upon addition of Hg^{2+} (2 – 10 *ppb*) by 1 *ppb*. Bottom picture: The linear fluorescence response of **RG1** (0.1 μM) upon addition of Hg^{2+} (2 – 10 *ppb*) in pure laboratory water. Excitation was 500nm, and the emission intensities were recorded at 550 nm Spectrum is recorded every 2 min after adding Hg^{2+} at 25 ºC.

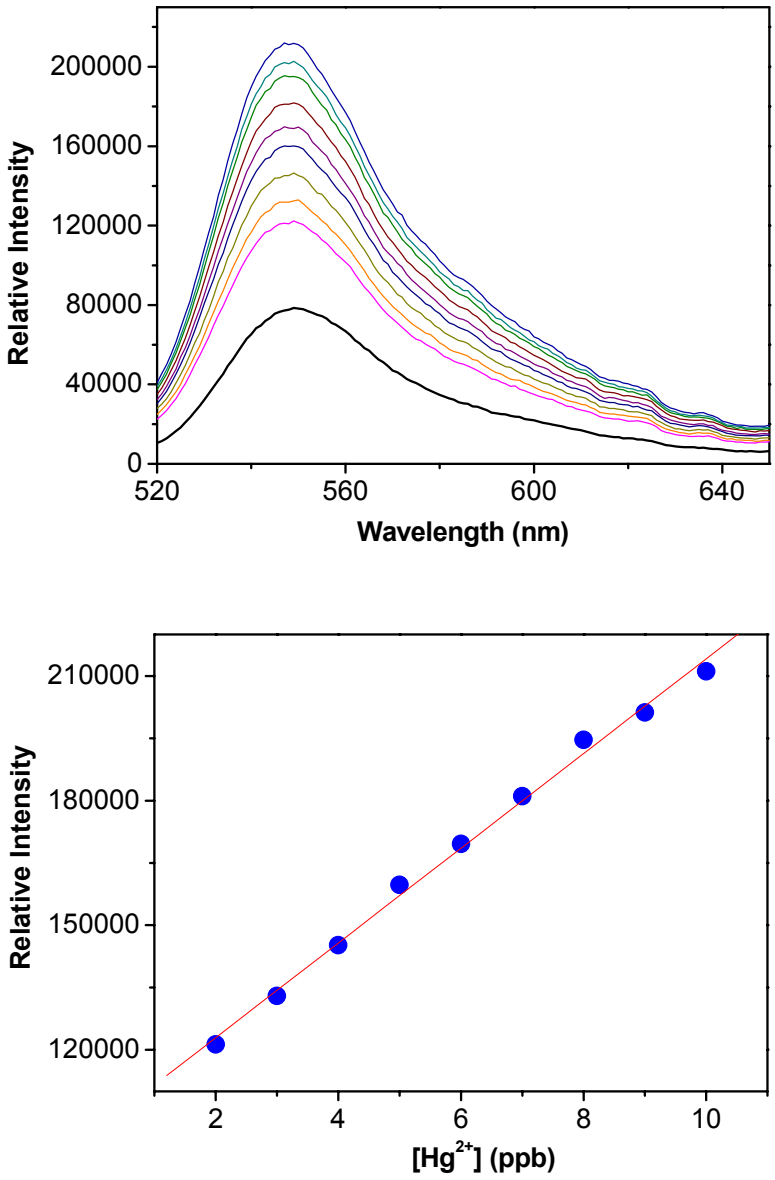

Figure S6. Top picture: The fluorescence emission changes of compound **RG1** (0.1 μM) in sea water upon addition of Hg^{2+} (2 – 10 *ppb*) by 1 *ppb*. Bottom picture: The linear fluorescence response of **RG1** (0.1 μM) upon addition of Hg^{2+} (2 – 10 ppb) in sea water. Excitation was provided at 500nm, and the emission intensities were integrated at 550nm Spectrum is recorded every 2 min after adding Hg^{2+} at 25 ºC.

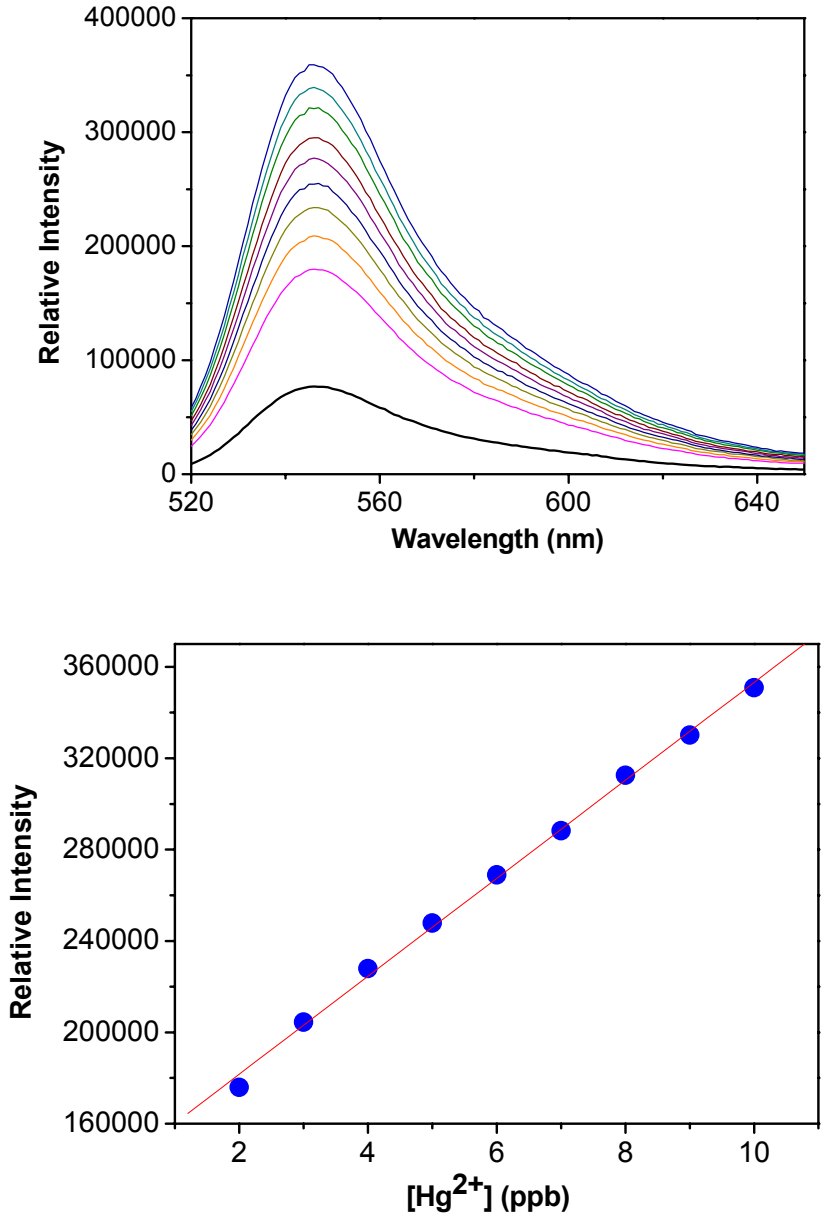

Figure S7. Top picture: The fluorescence emission changes of compound **RG1** (0.1 μM) in reservoir fresh water (FW) upon addition of Hg^{2+} (2 – 10 *ppb*) by 1 *ppb*. Bottom picture: The linear fluorescence response of **RG1** (0.1 μM) upon addition of Hg^{2+} (2 – 10 ppb) in reservoir fresh water Excitation was provided at 500nm, and the emission intensities were integrated at 550nm Spectrum is recorded every 2 min after adding Hg^{2+} at 25 ºC.