Electronic Supplementary Information

Simple, efficient and selective colorimetric sensors for naked eye detection of Hg^{2+}, Cu^{2+} and Fe^{3+}

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1. Copies of ^{1}H NMR and ^{13}C NMR spectra of **3b** and **4b**

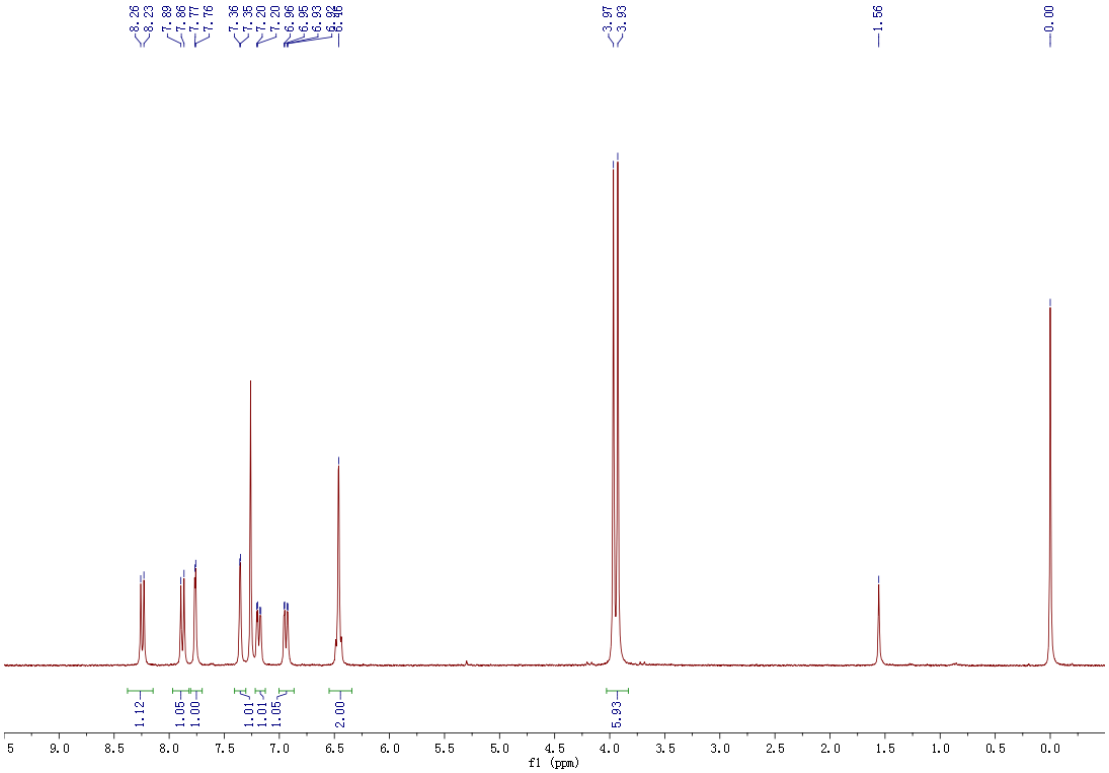

Fig. S1. ^{1}H NMR spectrum ($CDCl_3$, 300 MHz, 298 K) of **3b**.

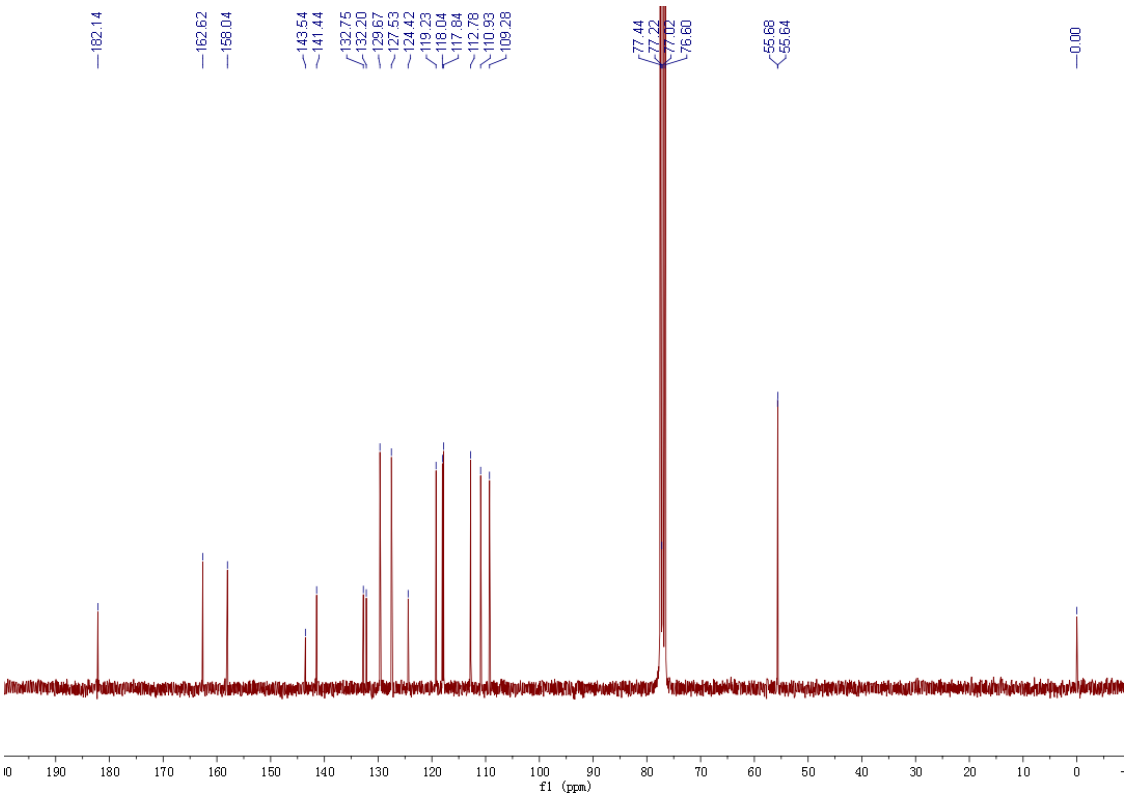

Fig. S2. ^{13}C NMR spectrum ($CDCl_3$, 300 MHz, 298 K) of **3b**.

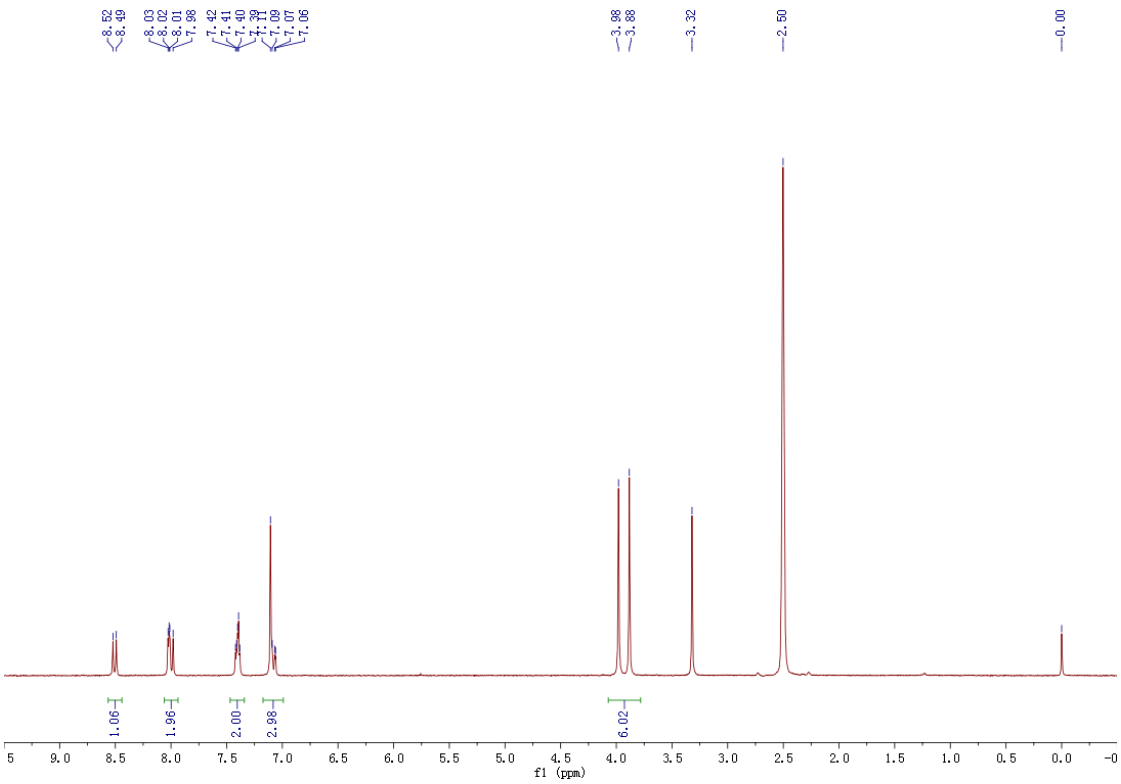

Fig. S3. ^{1}H NMR spectrum (DMSO-d_6, 300 MHz, 298 K) of **4b**.

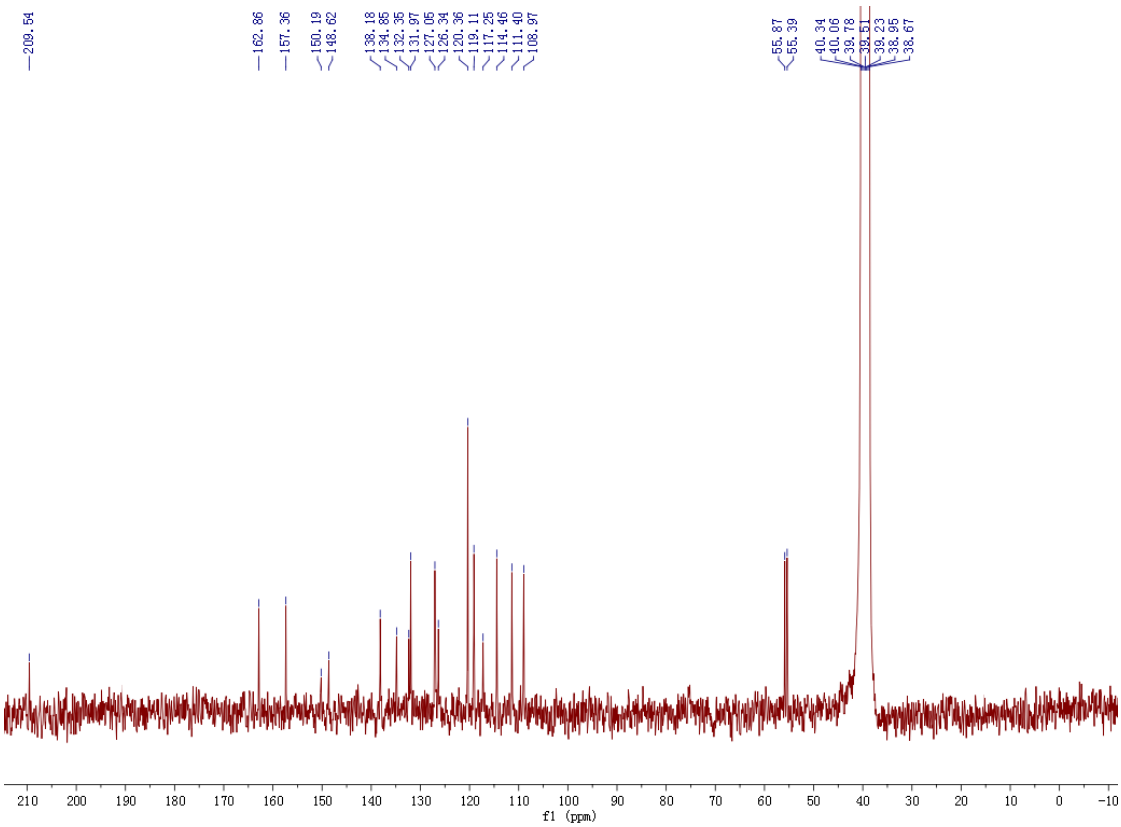

Fig. S4. ^{13}C NMR spectrum (DMSO-d_6, 300 MHz, 298 K) of **4b**.

2. UV-Vis spectra of **4a**, **3b** and **4b** in the presence of various metal ions

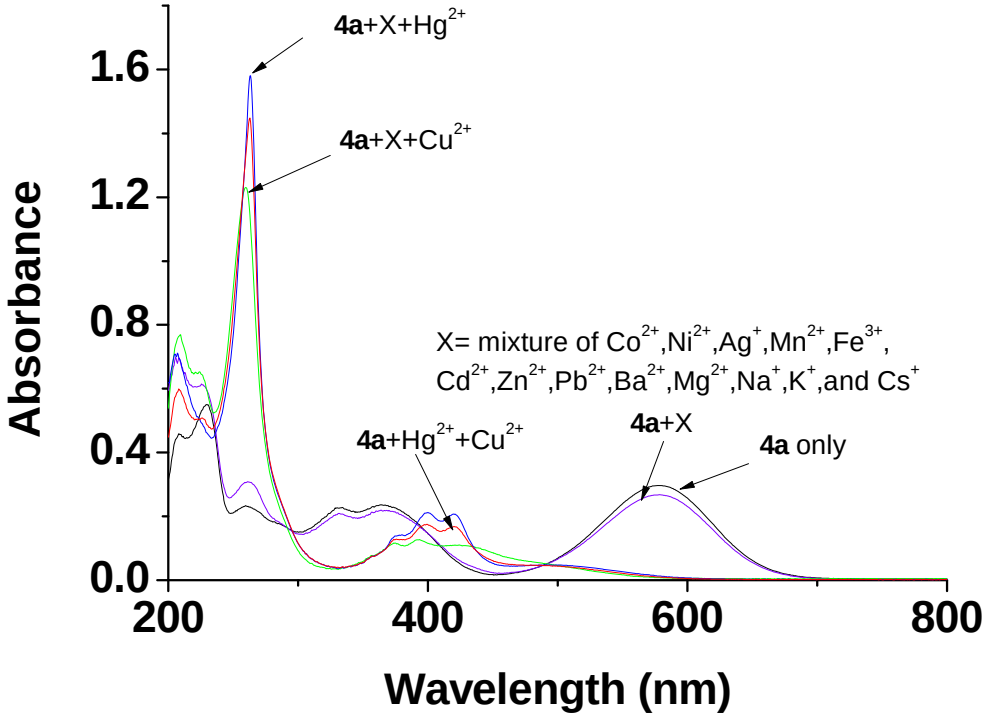

Fig. S5 Absorption spectra of **4a** (20 μM) in the presence of different metal ions (1 equiv., respectively) in acetonitrile.

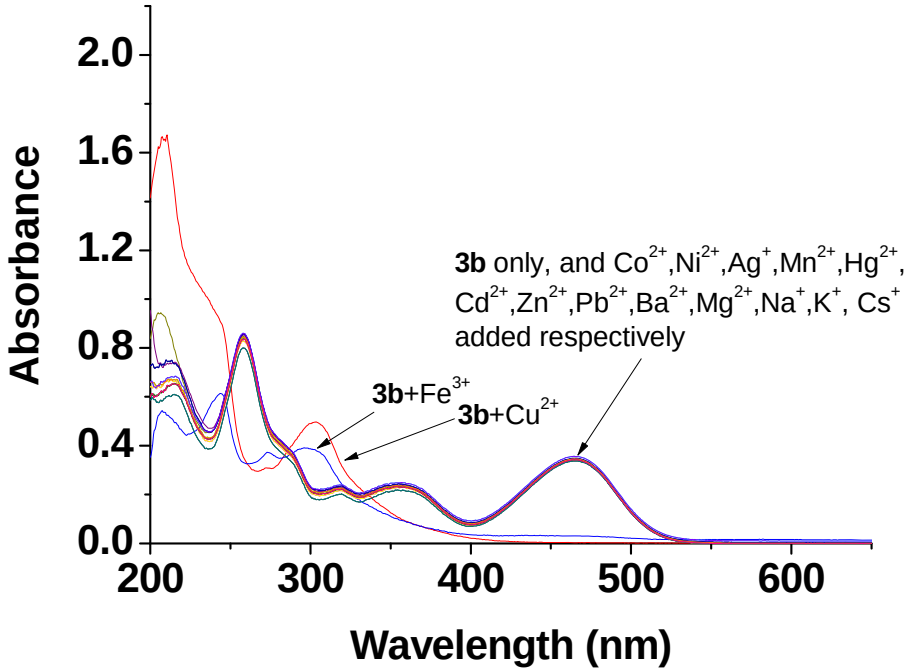

Fig. S6 Absorption spectra of **3b** (20 μM) in acetonitrile upon the addition of 2 equiv. of various metal ions.

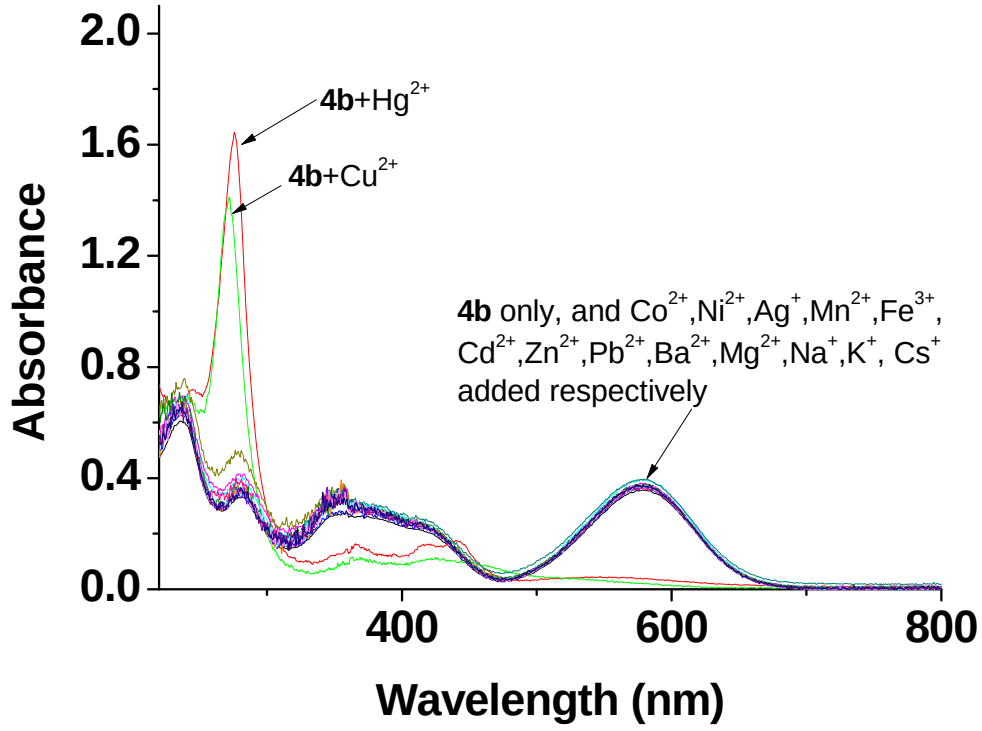

Fig. S7 Absorption spectra of **4b** (20 μM) in acetonitrile upon the addition of 1 equiv. of various metal ions.

3. Job's plots for the complexation between **4a** and Hg^{2+} and Cu^{2+}

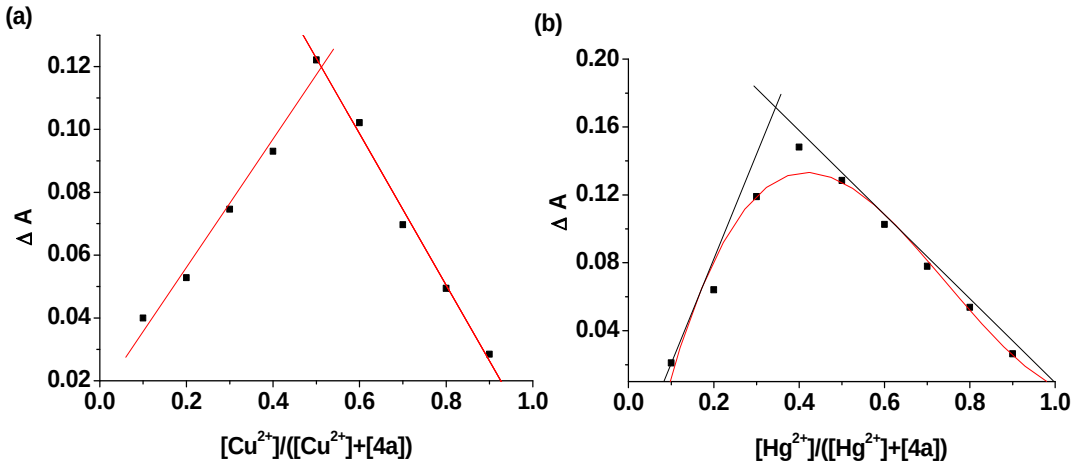

Fig. S8 (a) Job's plot at 579nm for the complexation between **4a** and Cu^{2+}; (b) Job's plot at 579nm for the complexation between **4a** and Hg^{2+}.

4. UV-Vis titration spectra of **4b** in the presence of Hg^{2+} and Cu^{2+}

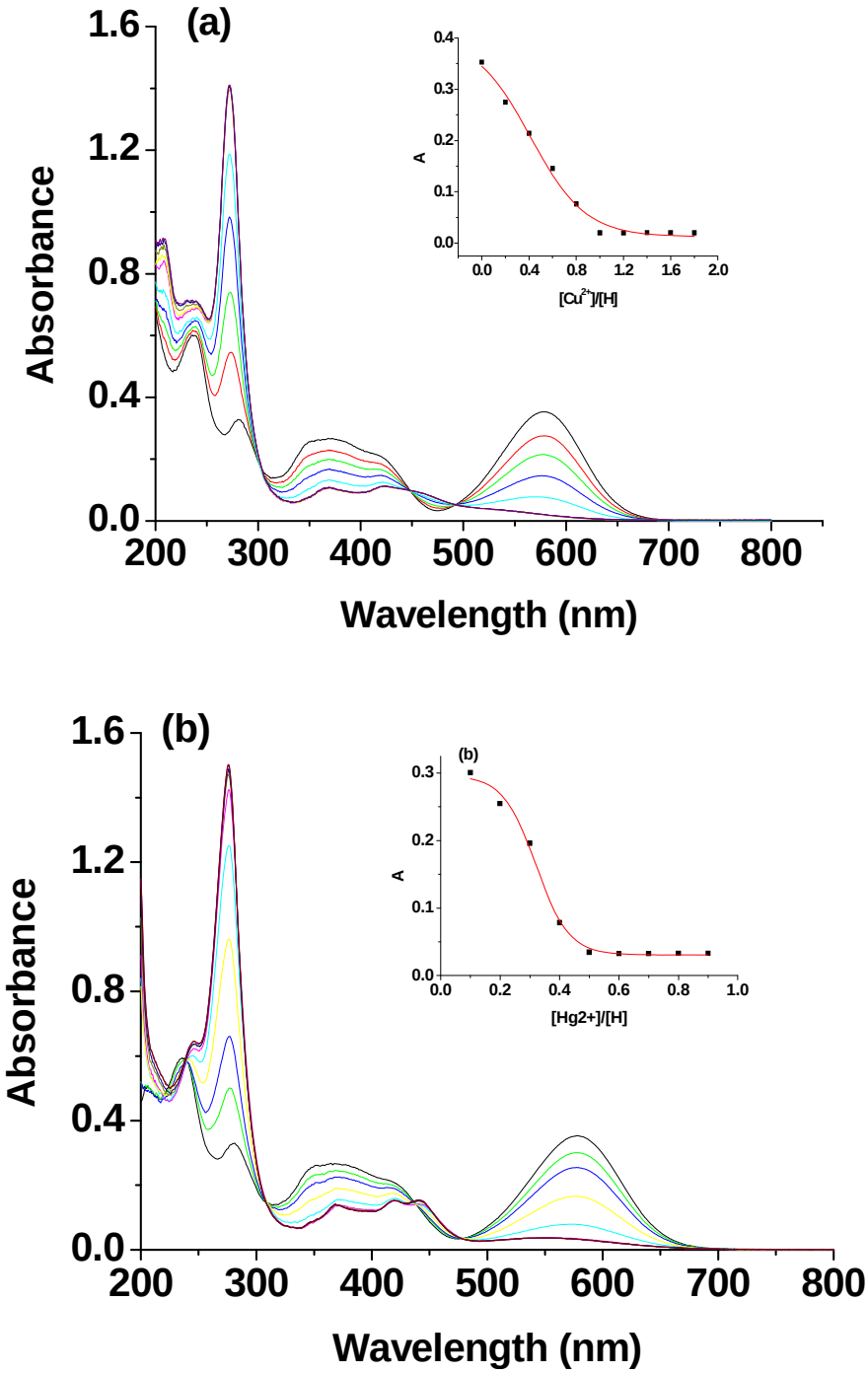

Fig. S9 (a) UV-Vis titration of compound **4b** (2.0×10^{-5} M) in acetonitrile upon the addition of a acetonitrile solution of $Cu(ClO_4)_2$. Inset: absorption at 579 nm vs. the number of equivalents of Cu^{2+}(n) added. (b) UV-Vis titration upon the addition of an acetonitrile solution of $Hg(ClO_4)_2$. Inset: absorption at 579 nm vs. the number of equivalents of Hg^{2+}(n) added.

5. Job's plots for the complexation between **4b** and Hg^{2+} and Cu^{2+}

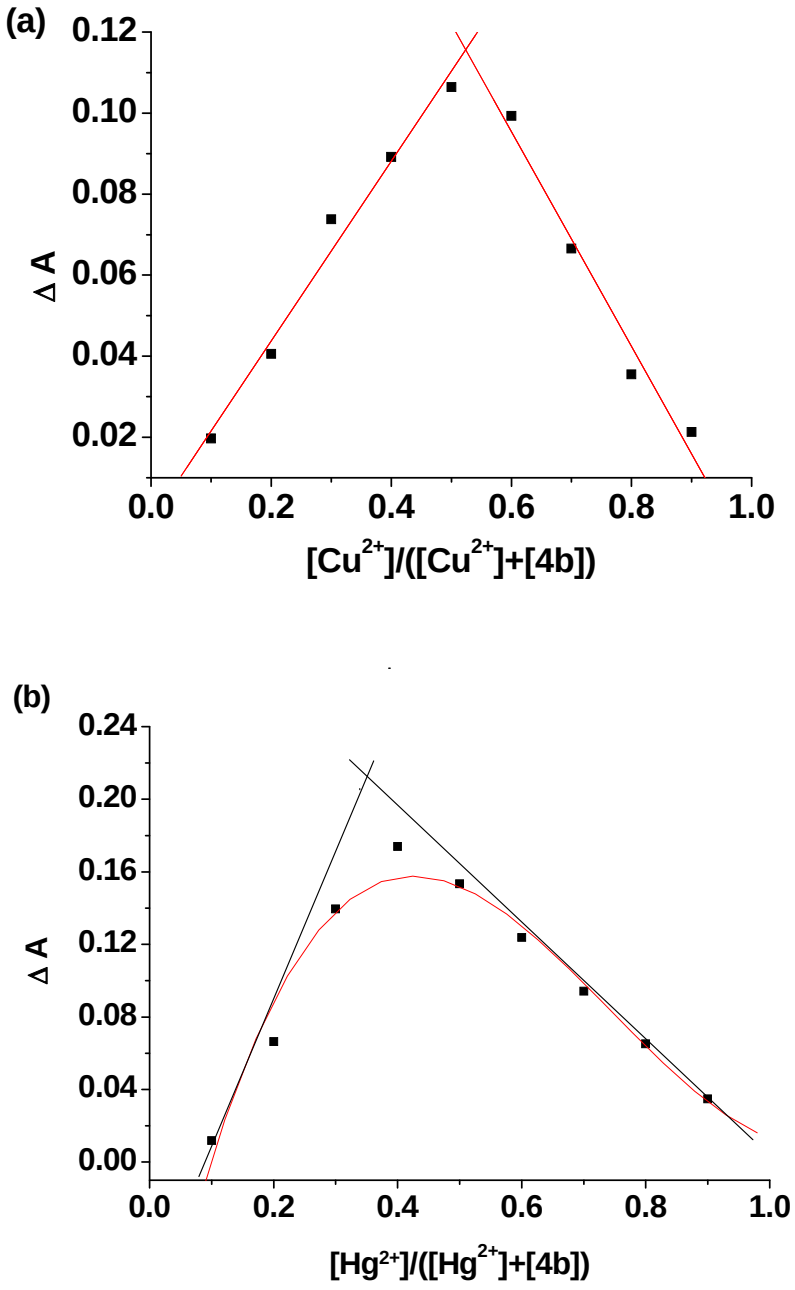

Fig. S10 (a) Job's plot at 579nm for the complexation between **4b** and Cu^{2+}. (b) Job's plot at 579nm for the complexation between **4b** and Hg^{2+}.

6. UV-vis titration spectra of **3b** upon the addition of Fe^{3+} and Cu^{2+}

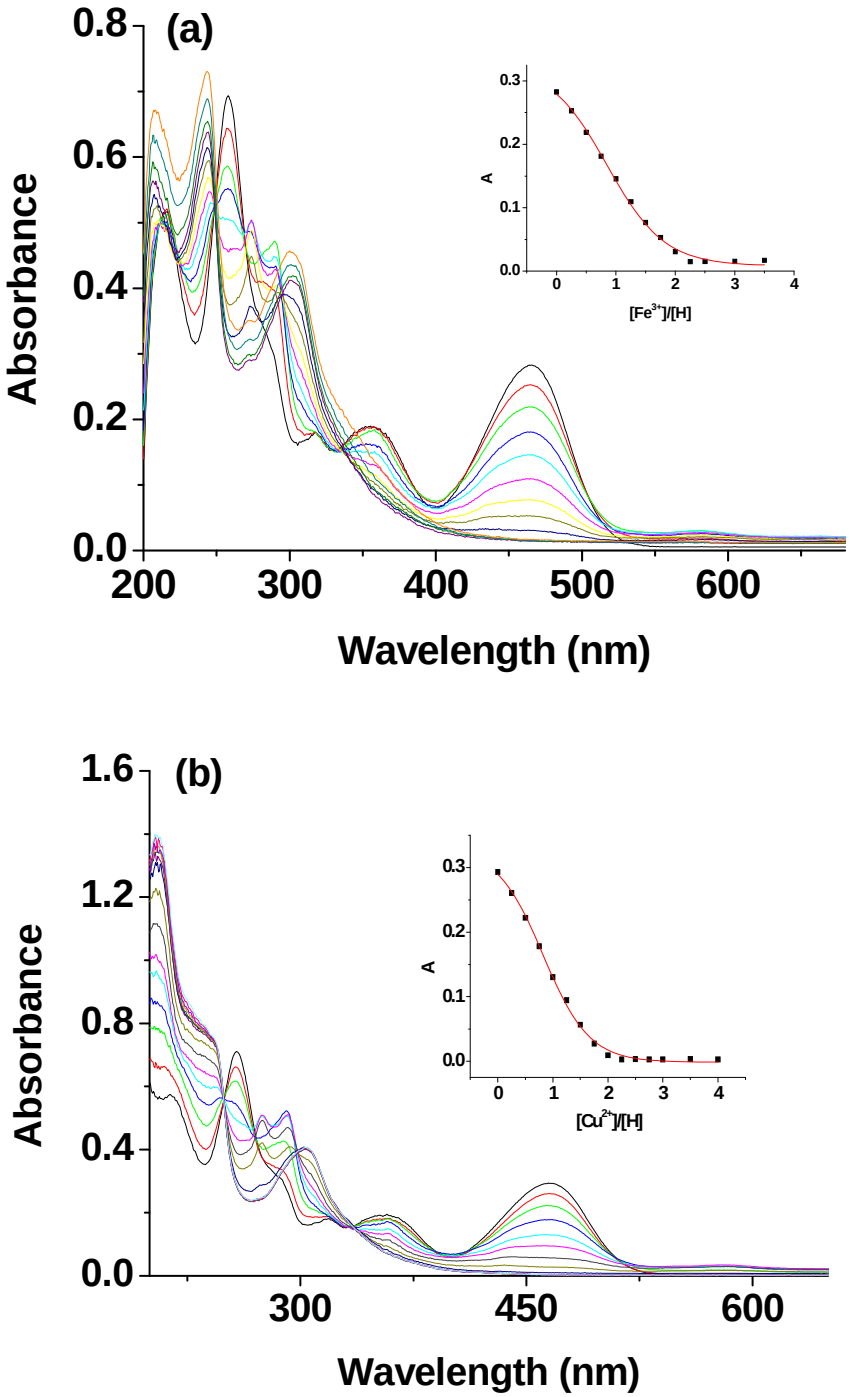

Fig. S11 (a) UV-Vis titration of **3b** upon the addition of an acetonitrile solution of $Fe(ClO_4)_3$. Inset: titration curve obtained from absorption at 465 nm vs. the number of equivalents of Fe^{3+}(n) added. (b) UV-Vis titration of **3b** upon the addition of an acetonitrile solution of $Cu(ClO_4)_2$. Inset: titration curve obtained from absorption at 465 nm vs. the number of equivalents of Cu^{2+} (n) added.