**New Journal of Chemistry**

# Supporting Information

## Bodipy Based Chemosensors for Highly Sensitive and Selective Detection of $Hg^{2+}$ Ion

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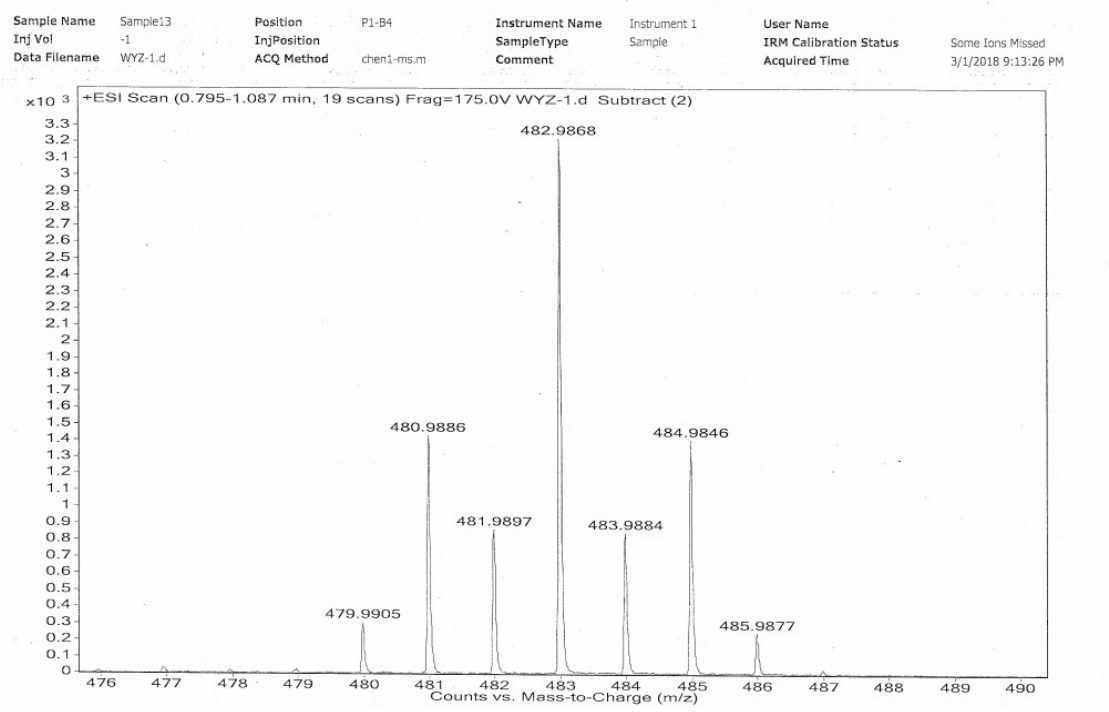


Fig. S1 Mass spectrum of B1

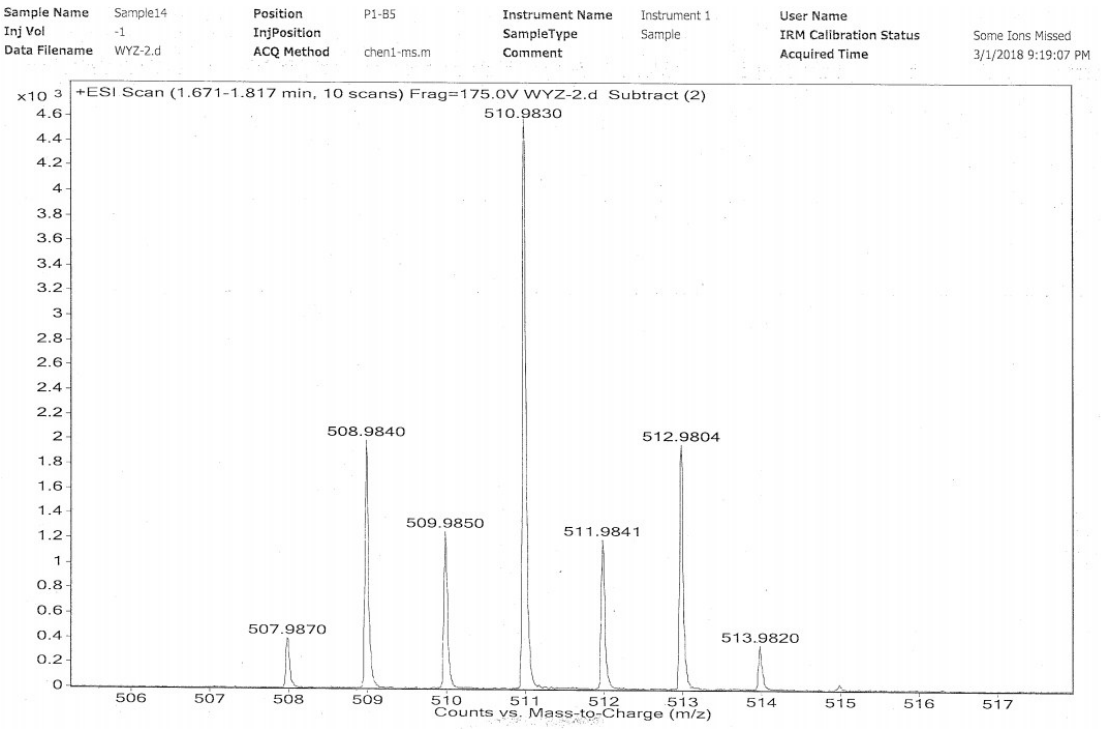


Fig. S2 Mass spectrum of B2

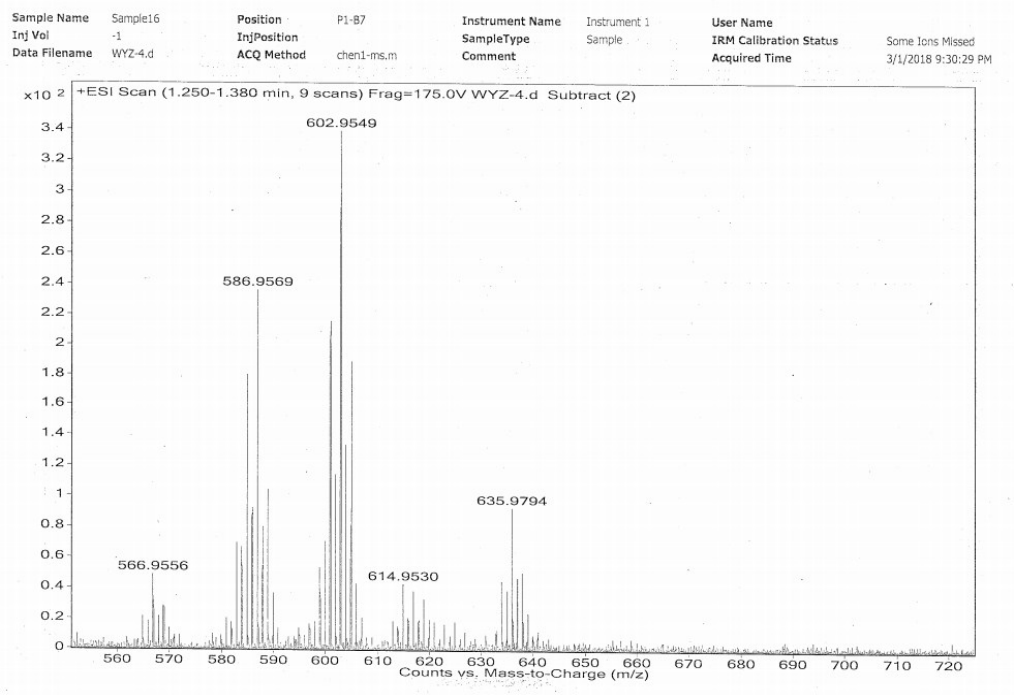


Fig. S3 Mass spectrum of BE

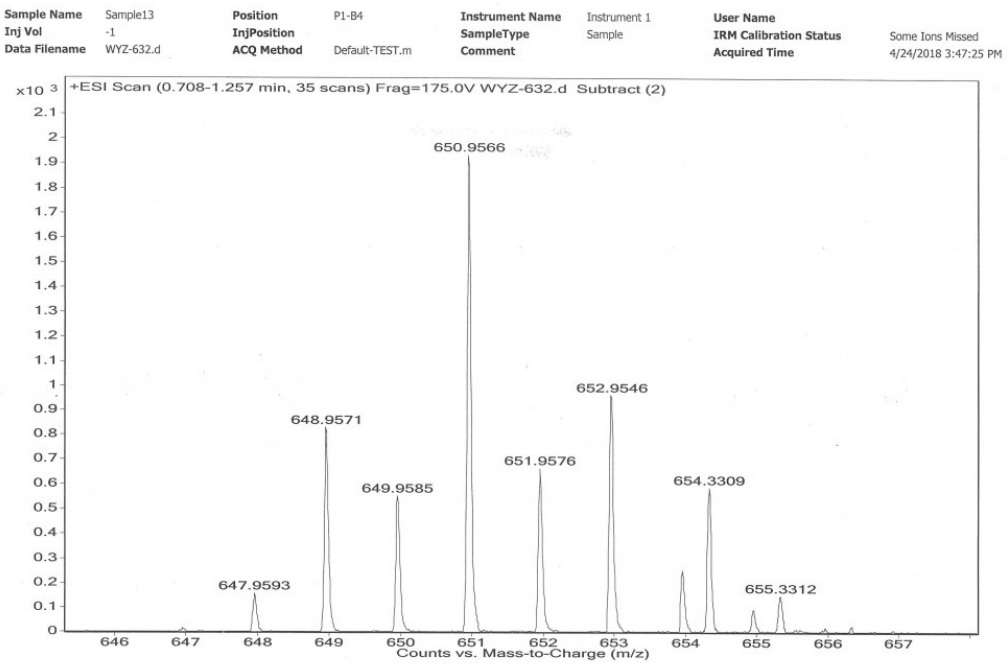


Fig. S4 Mass spectrum of BB

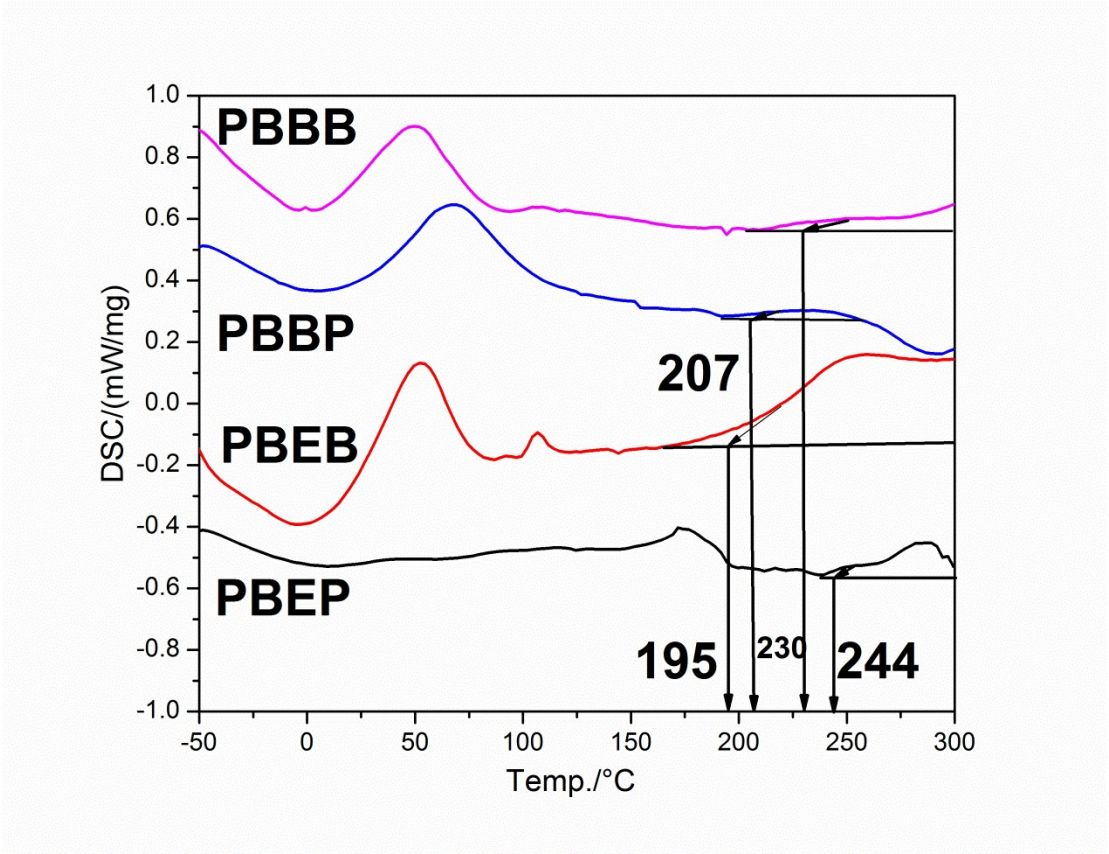


**Fig. S5** DSC curves of PBEP, PBEB, PBBP and PBBB

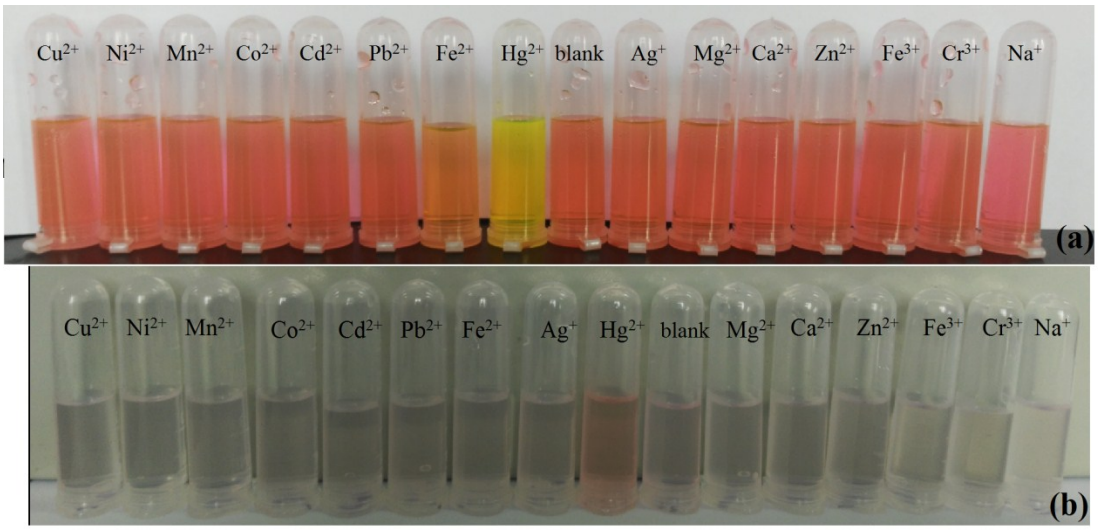


**Fig. S6** (a) images of **BE** (10 μM) in DMF under natural light. (b) images of **BB** (1 μM) in DMF under natural light.

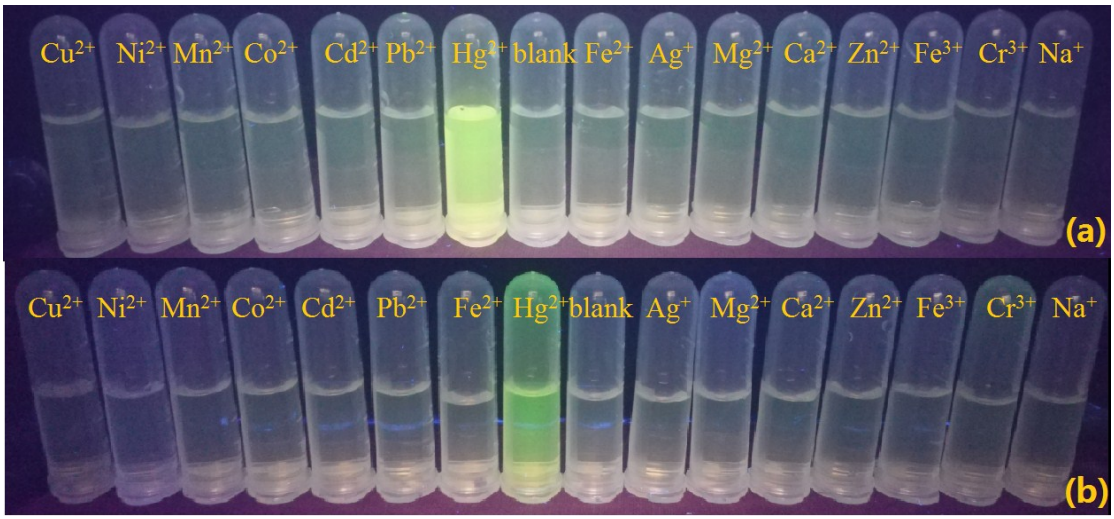


**Fig. S7** (a) images of BE (10 μM) in DMF under UV light (254 nm). (b) images of BB (1 μM) in DMF under UV light (254 nm).

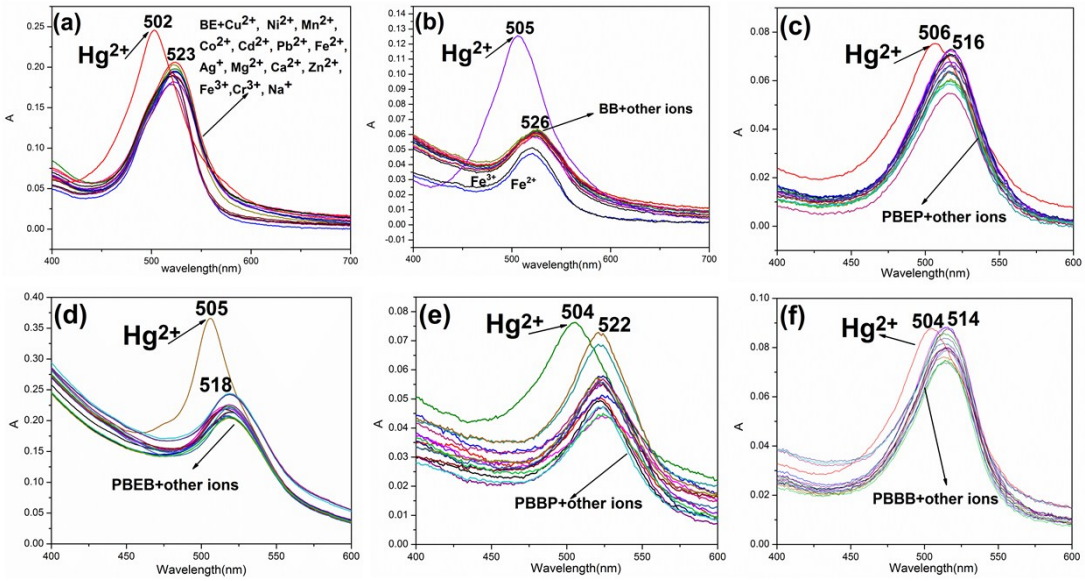


**Fig. S8**. UV–Vis spectra of (a) BE, (b) BB, (c) PBEP, (d) PBEB, (e) PBBP and (f) PBBB with different metals in DMF/water (v/v = 1/1) (5 μm, $Cu^{2+}$, $Hg^{2+}$, $Ni^{2+}$, $Mn^{2+}$,$Co^{2+}$, $Cd^{2+}$, $Pb^{2+}$, $Fe^{2+}$, $Ag^{+}$, $Mg^{2+}$, $Ca^{2+}$, $Zn^{2+}$, $Fe^{3+}$, $Cr^{3+}$, $Na^{+}$)


**Fig. S9** (a) images of PBEP (1 μM) in DMF under UV light (254 nm). (b) images of PBEB (1 μM) in DMF under UV light (254 nm). (c) images of PBBP (1 μM) in DMF under UV light (254 nm). (d) images of PBBB (1 μM) in DMF under UV light (254 nm).

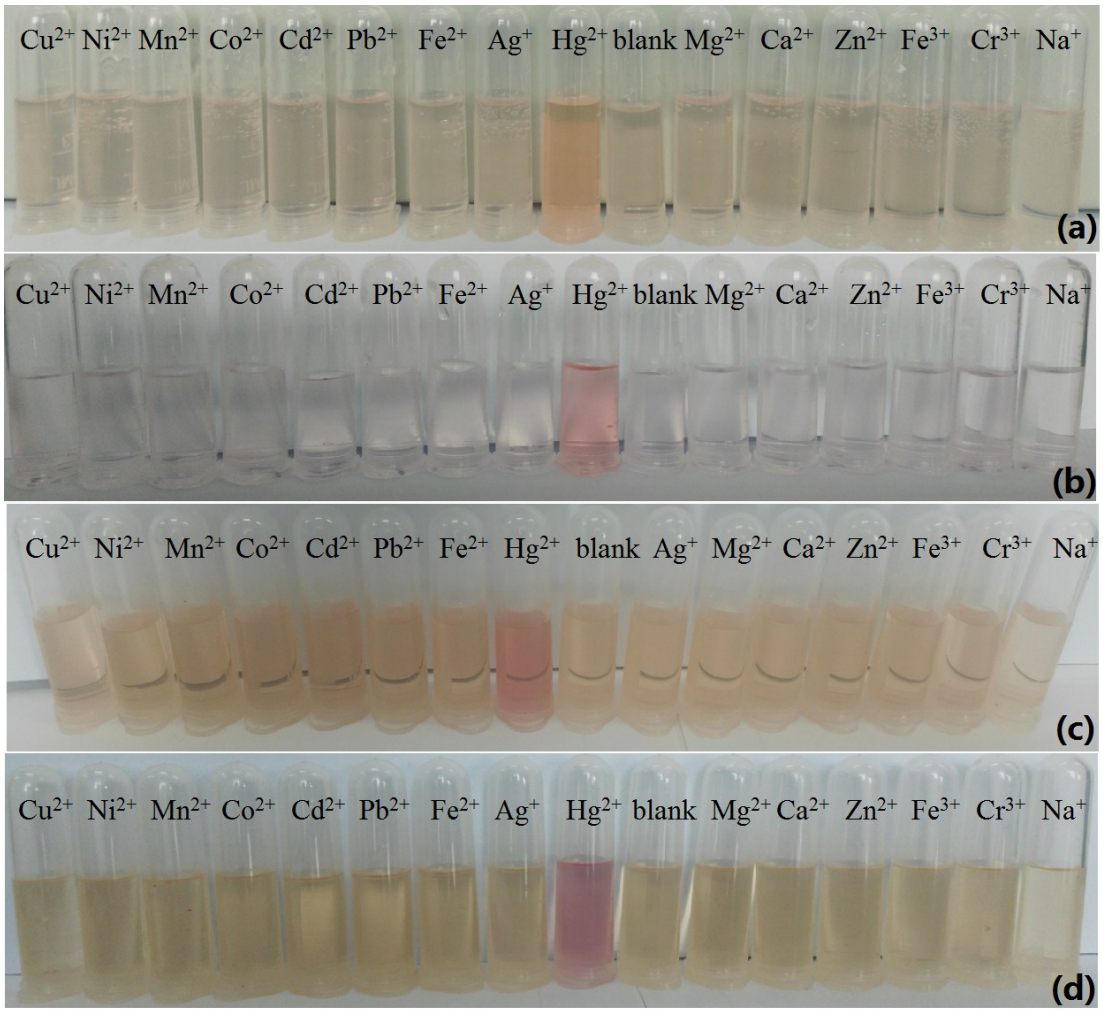


**Fig. S10** (a) images of PBEP (1 μM) in DMF under natural light. (b) images of PBEB (1 μM) in DMF under natural light. (c) images of PBBP (1 μM) in DMF under natural light. (d) images of PBBB (1 μM) in DMF under natural light.

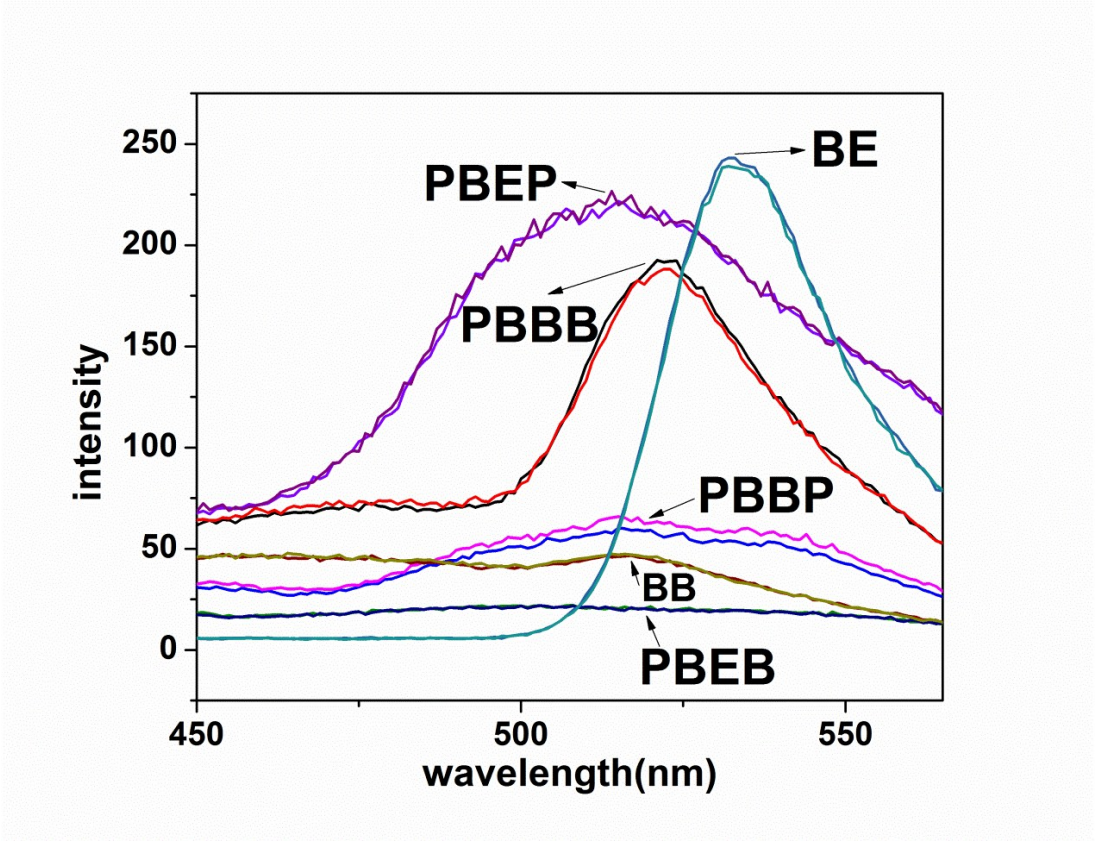


**Fig. S11** Fluorescent spectra of the DMF solutions of the studied chemosensors BE (10 μM), BB (1 μM), PBEP (10 μM), PBEB (1 μM), PBBP (10 μM), PBBB (1 μM) in the presence of pure water and natural lake water， when excited with light of λex=360 nm.

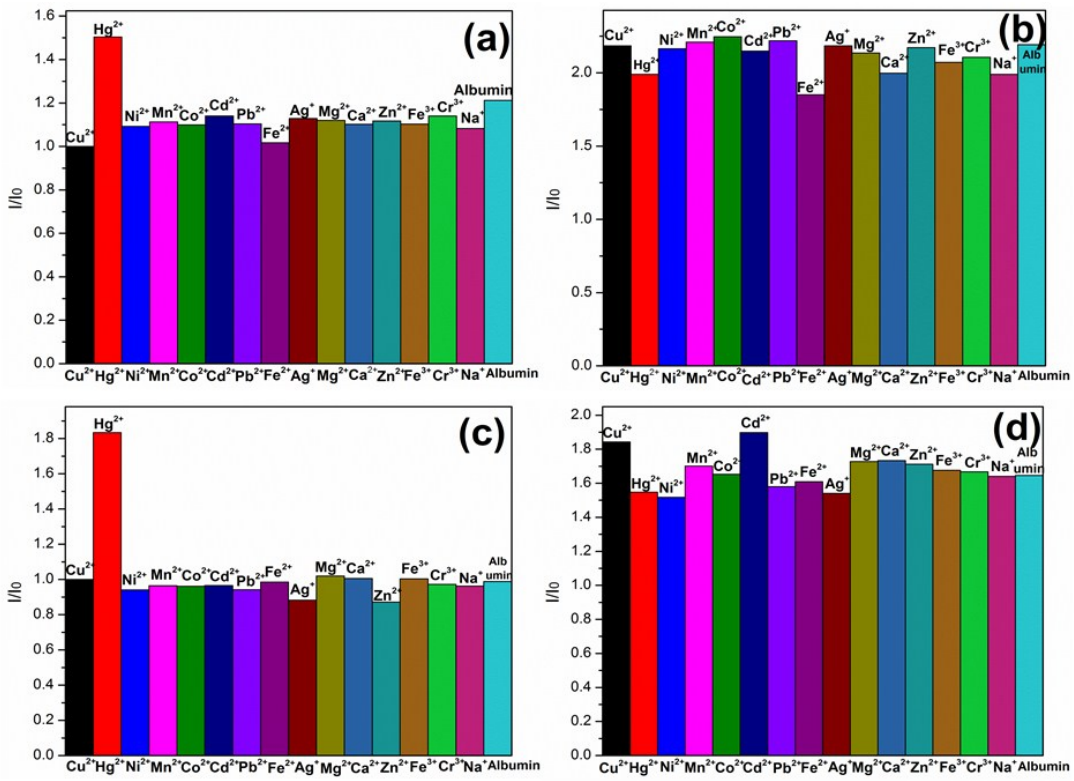


**Fig. S12** Fluorescent response of BE (10 μM) and BB (10 μM) with metal ions (100 μM) and albumin (0.5 mg/mL). (a) BE with single metal ions and albumin, (b) BE with other metal ions and albumin and $Hg^{2+}$, (c) BB with other metal ions and albumin, (d) BB with single metal ions and albumin and $Hg^{2+}$.