Electronic Supplementary Material (ESI) for RSC Advances.

A highly selective and sensitive fluorescent chemosensor for Hg^{2+} based on a pyridine-appended π-conjugated ligand

Yaping Yang,[a] Xin-Long Ni,[a]* Tao Sun,[a] Hang Cong[a] and Gang Wei[b]

[a] Key Laboratory of Macrocyclic and Supramolecular Chemistry of Guizhou Province, Guizhou University, Guiyang 550025, China

[b] CSIRO Manufacturing Flagship PO Box 218, Lindfield, NSW 2070, Australia.

E-mail: longni333@163.com.

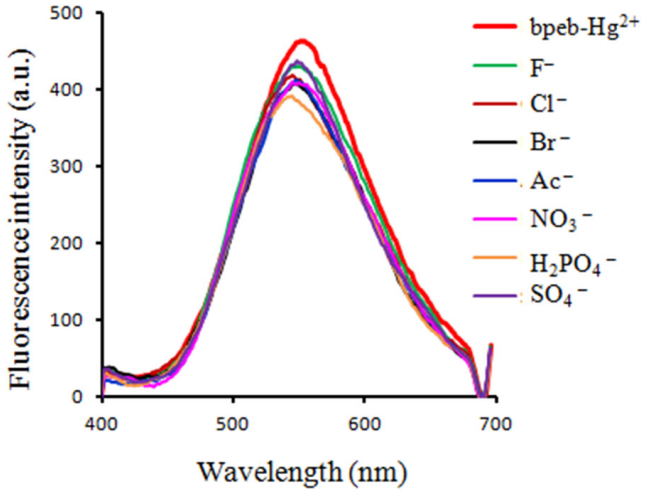

Figure S1. Fluorescence response of **bpeb** (10 μM) with Hg^{2+} (50 μM) in aqueous solution buffered with HEPES (10 mM, pH 7.4) to 50 μM different tested anions as their their tetrabutylammonium (TBA) salts at 298 K. λex = 360 nm.

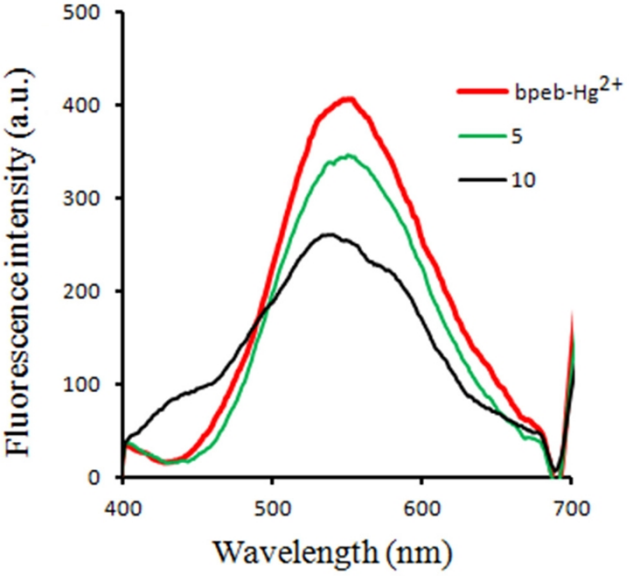

Figure S2. Fluorescence spectra of **bpeb**-Hg^{2+} upon addition of increasing concentrations of EDTA (5 and 10 equiv.) in aqueous solution buffered with HEPES (10 mM, pH 7.4). λex = 360 nm.

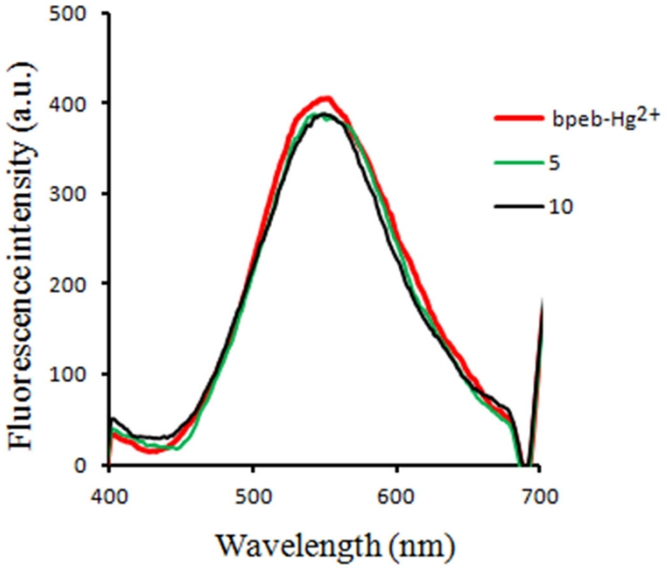

Figure S3. Fluorescence spectra of **bpeb**-Hg^{2+} upon addition of increasing concentrations of Cys (5 and 10 equiv.) in aqueous solution buffered with HEPES (10 mM, pH 7.4). λex = 360 nm.

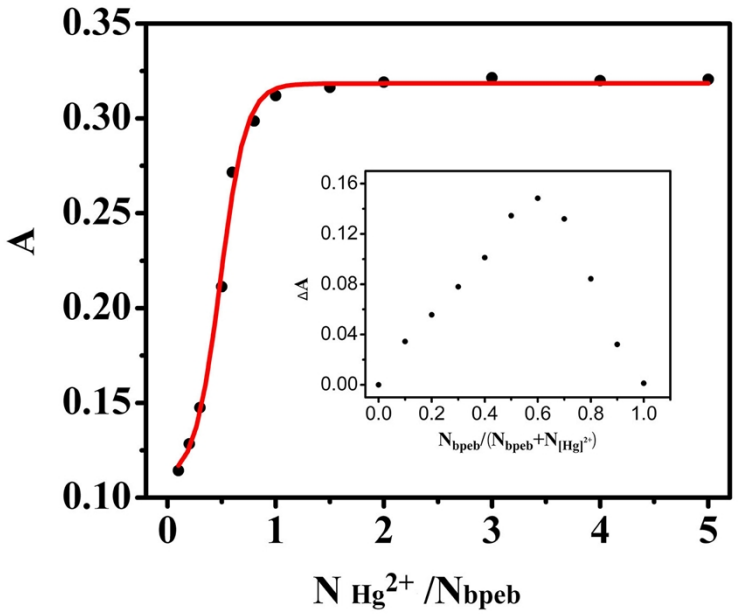

Figure S4. $N_{[Hg^{2+}]}/N_{bpeb}$ curve and Job's plot showing the 2:1 binding of **bpeb** to Hg^{2+}.

MTT cell viability assay

PC3 cells were plated overnight on 96-well plates at 50000 cells per well in growth medium. After seeding, cells were maintained in growth media treated at increasing concentrations (2.5 µM, 5 µM, 10 µM, 20 µM and 30 µM) of **bpeb** (dissolved in DMSO, final concentration) for 24 h. The MTT cytotoxicity assay was performed by adding 15 µL of an MTT (5 mg/mL) solution to each well at 37 °C and incubating for 3-4 h. The MTT-containing media were discarded and 200 µL of DMSO was added to each well. The absorbance of each well was measured on a Thermo MK3 microplate reader at 490 nm. The optical density of the result in MTT assay was directly proportional to the number of viable cells.

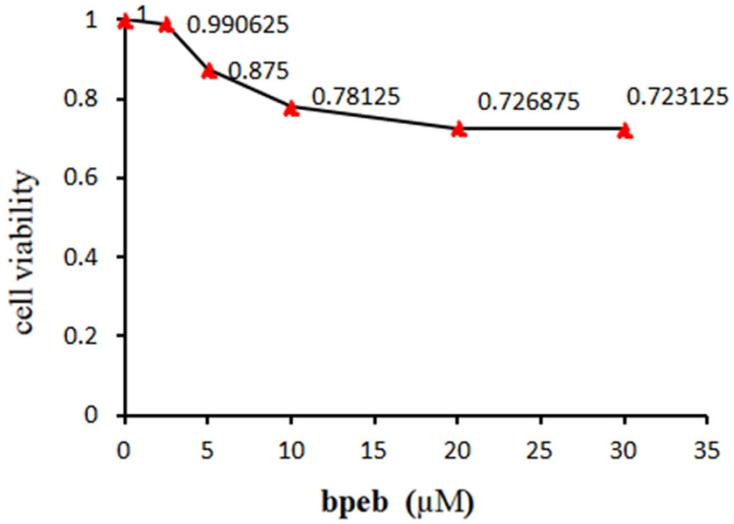

Figure S5. PC3 cell viability in the presence of **bpeb** with varying concentrations measured by MTT.