

## Supporting Information

### **A turn on fluorescent sensor based on lanthanide coordination polymer nanoparticles for the detection of mercury (II) in biological fluids**

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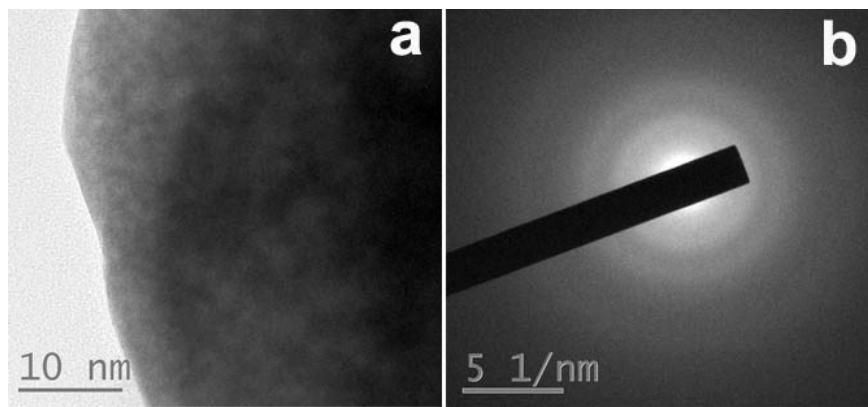


Figure S1. HR TEM image (a) and selected area electron diffraction (SAED) image of Eu/IPA CPNPs.

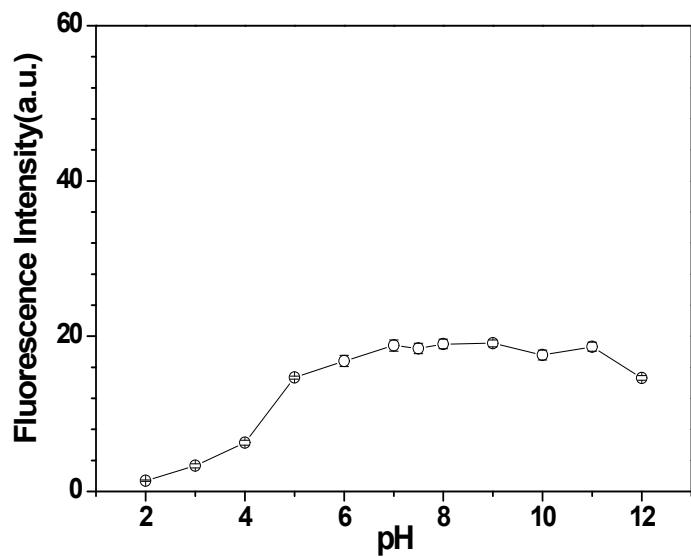


Figure S2. Changes of the fluorescence of 26.5  $\mu\text{g/mL}$  of Eu/IPA CPNPs in the presence of 320  $\mu\text{M}$  of Im in the reaction media with different pH values.

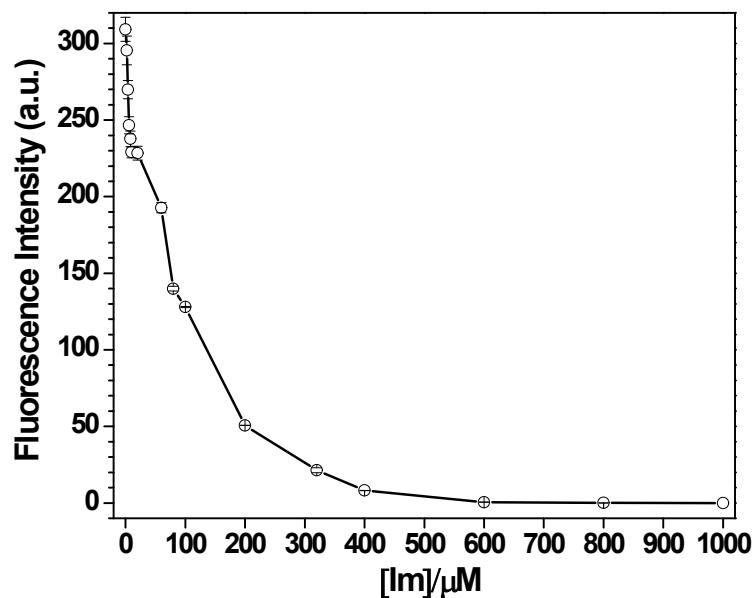


Figure S3. Fluorescence changes of Eu/IPA CPNPs in the presence of Im with different concentrations. The reactions were performed in Tris-HCl buffer (25 mM, pH 7.0) with 26.5  $\mu$ g/mL Eu/IPA CPNPs and Im with final concentration from 0 to 1000  $\mu$ M at room temperature, the total volume is 100  $\mu$ L.

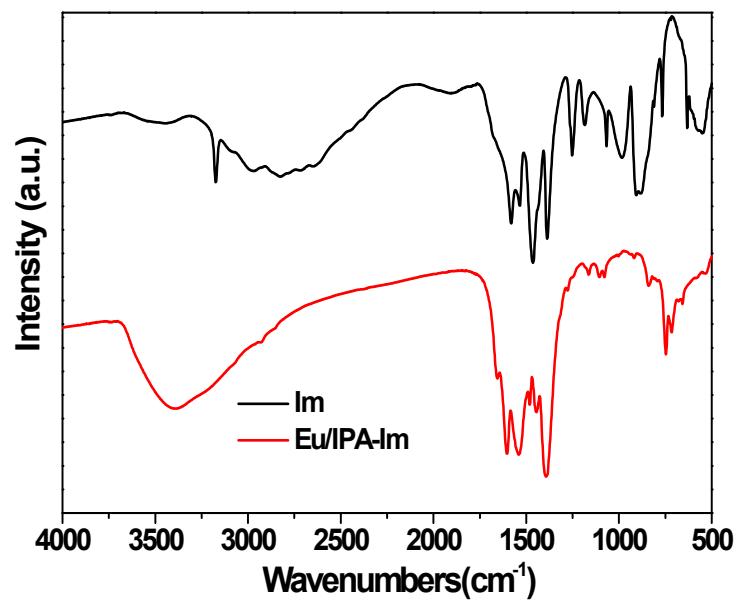


Figure S4. FTIR spectra of pure Im and Eu/IPA-Im complex.

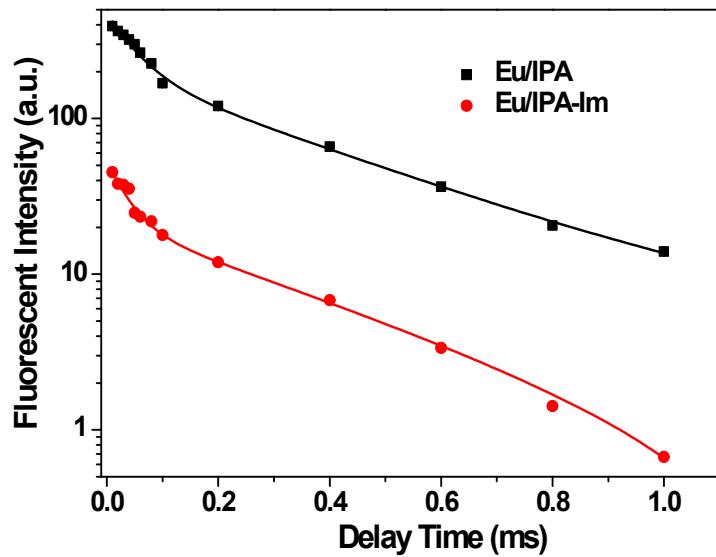


Figure S5. Emission lifetime of Eu/IPA CPNPs and Eu/IPA-Im complex in the absence and presence of  $1.5 \mu\text{M} \text{ Hg}^{2+}$ .

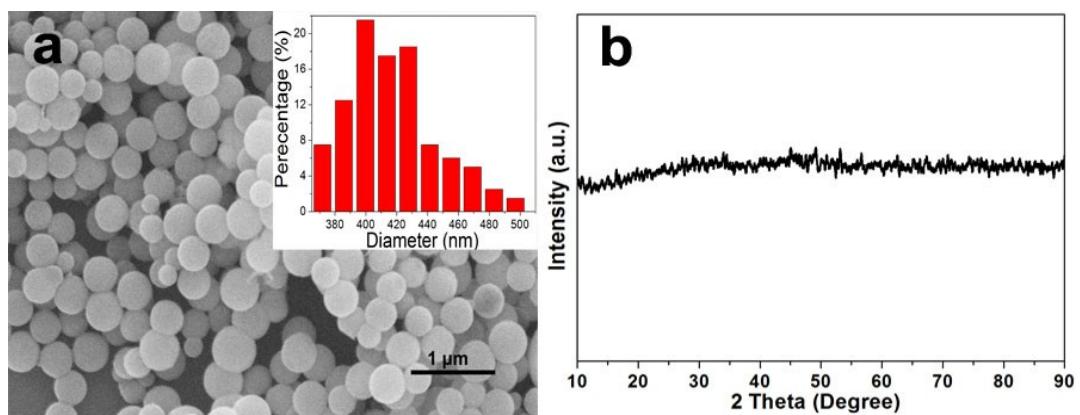


Figure S6. SEM (a) and XRD (b) of Eu/IPA CPNPs in the presence of Im. Inset is the size distribution of Eu/IPA-Im complex that were estimated from the particle diameter on the SEM images.

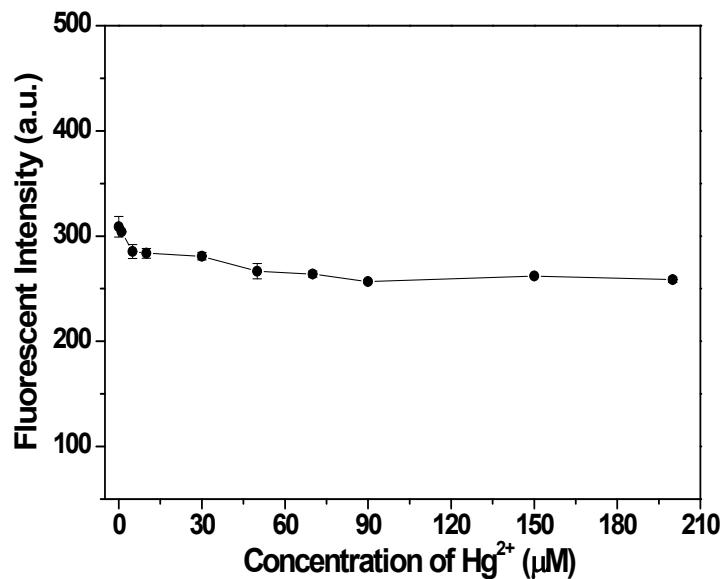


Figure S7. Effects of  $\text{Hg}^{2+}$  with different concentrations on the fluorescence of Eu/IPA CPNPs.

The reactions were performed in Tris-HCl buffer (25 mM, pH 7.0) with 26.5  $\mu\text{g}/\text{mL}$  Eu/IPA CPNPs and  $\text{Hg}^{2+}$  with final concentration from 0 to 200  $\mu\text{M}$  at room temperature, the total volume is 100  $\mu\text{L}$ .

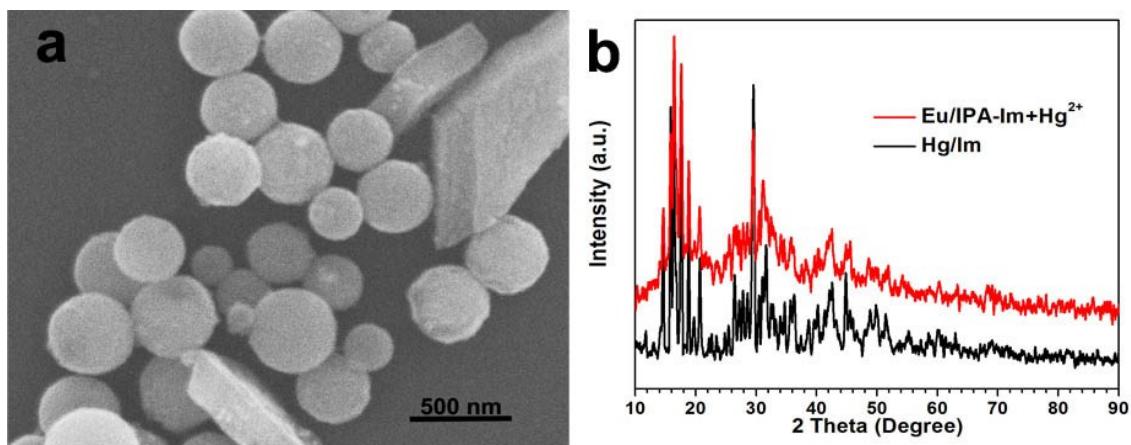


Figure S8. SEM image of Eu/IPA-Im complex in the presence of 100  $\mu\text{M}$   $\text{Hg}^{2+}$  (a) and XRD pattern of Eu/IPA-Im complex in the presence of 100  $\mu\text{M}$   $\text{Hg}^{2+}$  and pure Im/Hg complex (b).

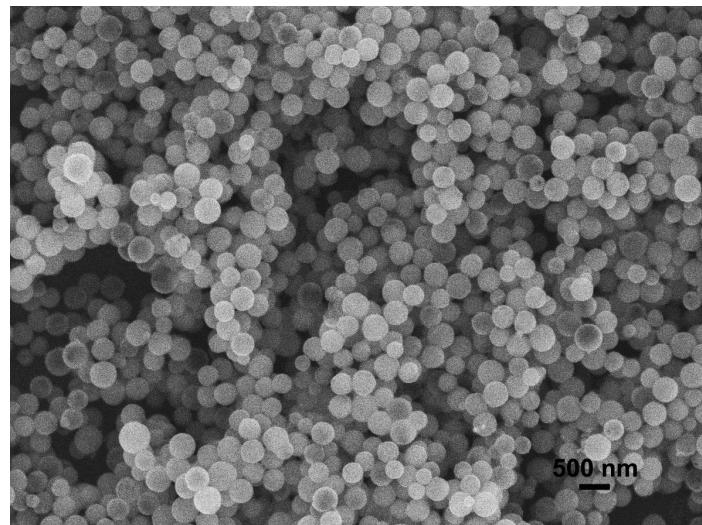


Figure S9. SEM image of CPNPs in the presence of  $\text{Hg}^{2+}$  (100  $\mu\text{M}$ ).

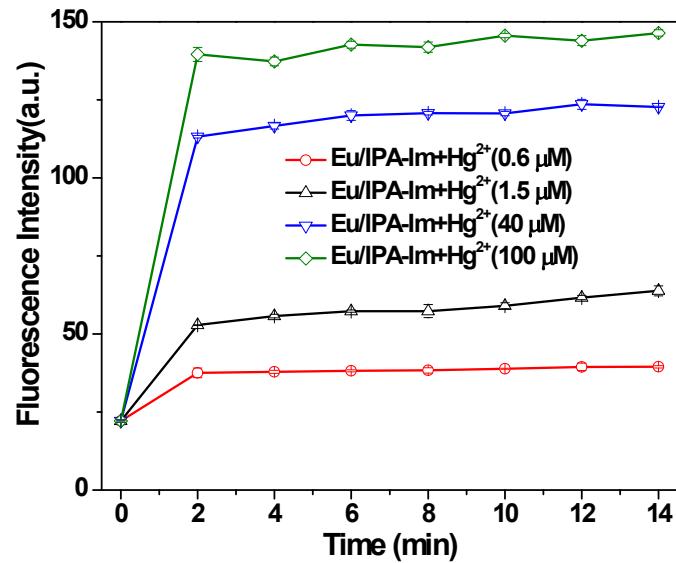


Figure S10. Time-dependent fluorescence changes of Eu/IPA-Im complex in the presence of  $\text{Hg}^{2+}$  with different concentrations (0.6, 1.5, 40, 100  $\mu\text{M}$ ).

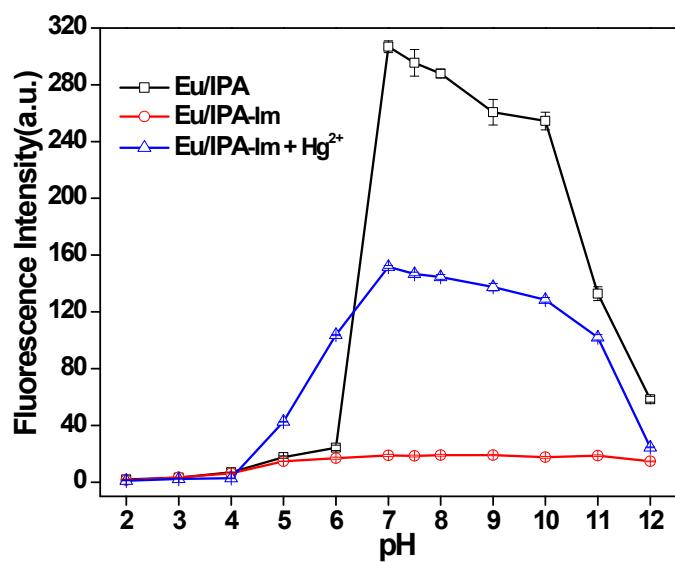


Figure S11. Effects of pH on the fluorescence of Eu/IPA CPNPs, Eu/IPA-Im complex in the absence and presence of 100  $\mu$ M Hg<sup>2+</sup>.

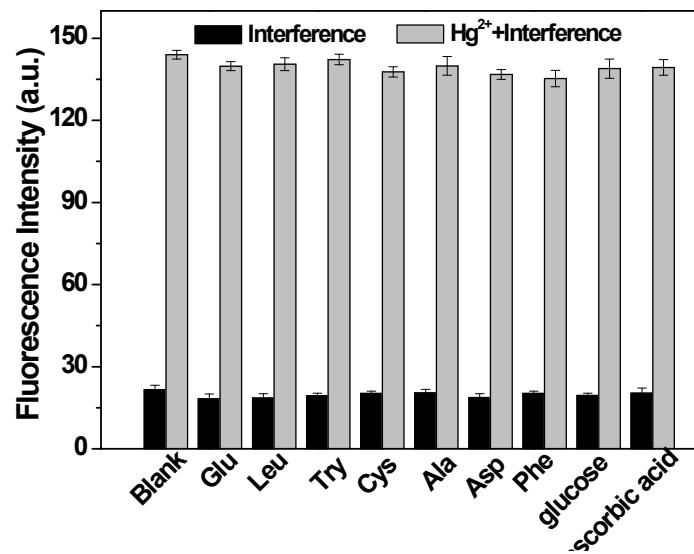


Figure S12. Effects of the interfering substances (each 100  $\mu$ M) coexisted in urine on the fluorescence of Eu/IPA-Im complex.

Table S1. Determination of  $\text{Hg}^{2+}$  in urine samples

Samples	Founded (nM)	Added (nM)	Detected (nM)	RSD (%), n=3)	Recovery(%)
<b>Urine-1</b>	0	10	$10.85 \pm 0.71$	3.16	108.5
<b>Urine-2</b>	0	200	$196.05 \pm 0.94$	3.37	98.03
<b>Urine-3</b>	0	800	$789.01 \pm 1.33$	3.81	98.63