Electronic Supplementary Material (ESI) for New Journal of Chemistry.
This journal is © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2018

Supporting Information

A turn-on fluorescent sensor for Hg^{2+} detection based on graphene oxide and DNA aptamers

Huan Guo [a], Jingshuai Li [a], Yuewen Li [b], Dan Wu [a], Hongmin Ma [a], Qin Wei [a], Bin Du [a,*]

[a] Key Laboratory of Interfacial Reaction & Sensing Analysis in Universities of Shandong, School of Chemistry and Chemical Engineering, University of Jinan, Jinan 250022, P.R. China

[b] School of Resources and Environment, University of Jinan, Jinan 250022, P.R. China

*** Corresponding author**

Tel: +86 531 8276 7370

Fax: +86 531 8276 7370

E-mail: dubin61@gmail.com (B. Du)

Supplementary sections

Table 1 Determination and recovery tests of Hg^{2+} in real samples by our sensor.

Real samples	Added Hg^{2+} (nM)	Measured Hg^{2+} (nM)			Recovery (%)	RSD (n = 5, %)
		This method	AFS	Relative error (%)		
1	0	3.60	3.65	1.37		
2	10	10.34	10.68	3.18	100.52	1.02
3	20	20.34	19.96	1.90	100.26	0.89
4	30	30.31	30.83	1.69	100.07	1.15

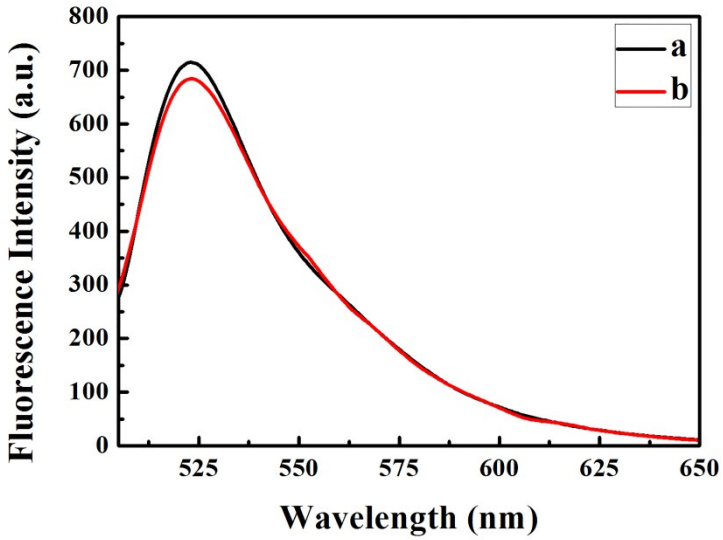

Fig. 1. Fluorescence emission spectra of AO. Conditions: The two reaction solutions were identical, which contain 1 μM AO, 50 μg/mL GO, 1 μM P2, 1 μM H-G4 and 0.05 μM Hg^{2+}. And curve a was obtained by measuring the supernate of final reaction solution; curve b was obtained after shaking well the final reaction solution.

We can see that the fluorescence intensity of curve a recovered more obviously compared with that of curve b. These results suggest that the removing of GO can raise the fluorescence recovering efficiency, indicating the improvement of sensitivity of our sensor. And in this work, the fluorescence emission spectra of detecting Hg^{2+}

were all obtained by measuring the supernate of final reaction solution.

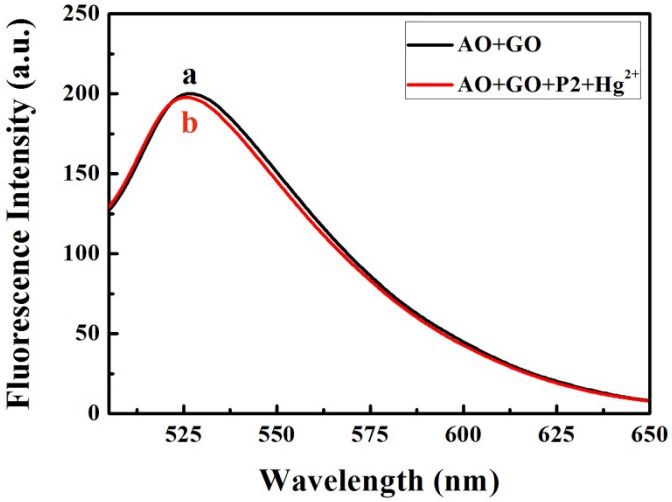

Fig. 2. Fluorescence emission spectra of AO. (a) 1 μM AO + 50 μg/mL GO; (b) 1 μM AO + 50 μg/mL GO + 1 μM P2 + 0.05 μM Hg^{2+}.

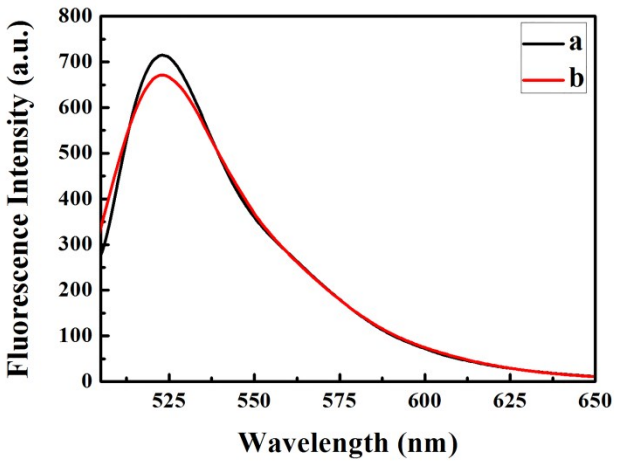

Fig. 3. Fluorescence emission spectra of AO. (a) 1 μM AO + 50 μg/mL GO + 1 μM P2 + 1 μM H-G4 + 0.05 μM Hg^{2+}; (b) 1 μM AO + 60 μg/mL GO + 1 μM P2 + 1 μM H-G4 + 0.05 μM Hg^{2+}.