Electronic supplementary information (ESI) for

Dithiolane Linked Thiorhodamine Dimer for Hg\(_{2}^{+}\)

Recognition in Living Cells

Weimin Liu,\(^{a}\) Liwei Xu,\(^{a,c}\) Hongyan Zhang,\(^{a}\) Juanjuan You,\(^{a,b}\) Xiaoling Zhang,\(^{c}\)
Ruilong Sheng,\(^{a}\) Huaping Li, \(^{d}\) Shikang Wu\(^{a}\) and Pengfei Wang\(^{a}\)

\(^{a}\)Laboratory of Organic Optoelectronic Functional Materials and Molecular Engineering, Technical Institute of Physics and Chemistry, the Chinese Academy of Sciences, Beijing, 100190, China; \(^{b}\)Graduate School of the Chinese Academy of Sciences, Beijing, China; \(^{c}\)Department of Chemistry, School of Sciences, Beijing Institute of Technology, Beijing 100081; \(^{d}\)Department of Chemistry & Biochemistry University of California, Santa Barbara, CA 93106.

wangpf@mail.ipc.ac.cn; zhangxl@bit.edu.cn; hli@chem.ucsb.edu.
Table of Contents

1. NMR spectra of compound A
2. NMR spectra of compound B
3. NMR spectra of compound C
4. Mass spectra of compounds A, B, and C.
5. FT-IR spectra of compounds A, B, and C.
6. Fig. S1
7. Fig. S2
8. Fig. S3
9. Fig. S4
1. $^1$H NMR (top) and $^{13}$C NMR (bottom) spectra of A in CDCl$_3$. 
2. $^1$H NMR (top) and $^{13}$C NMR (bottom) spectra of B in CDCl$_3$. 
3. $^1$H NMR (top) and $^{13}$C NMR (bottom) spectra of C in CDCl$_3$. 
4. Mass spectra of compounds A, B, and C.
5. FT-IR spectra of compounds A, B, and C.
6. **Fig. S1** The fluorescence spectra of compound B (10 μM) in ethanol-water (80/20, v/v) solution before and after the addition of Hg$^{2+}$ and the addition of DETA (diethylenetriamine).

![Fluorescence spectra of compound B](image)

7. **Fig. S2** The variation of fluorescence intensity of A (5 μM) and A+Hg$^{2+}$ (5 equiv) in ethanol-water (80/20, v/v) solution over a pH range from 4 to 9 at room temperature.

![Fluorescence intensity vs pH](image)
8. **Fig. S3** The fluorescence spectra of compound A (5 μM) in ethanol-water (80/20, v/v) solution before and after the addition of Hg$^{2+}$ and the addition of DETA (diethylenetriamine).

![Fluorescence Spectra](attachment:image.png)

9. **Fig. S4** The intracellular Hg$^{2+}$ was imaged in living cells at 37 °C using confocal microscopy. (a) HK-2 cells incubated with 10 μM of compound A buffer solution for 30 min. (b) Bright field image of living HK-2 cells in (a).

![Imaging](attachment:image2.png)