Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.


# Supplementary Material

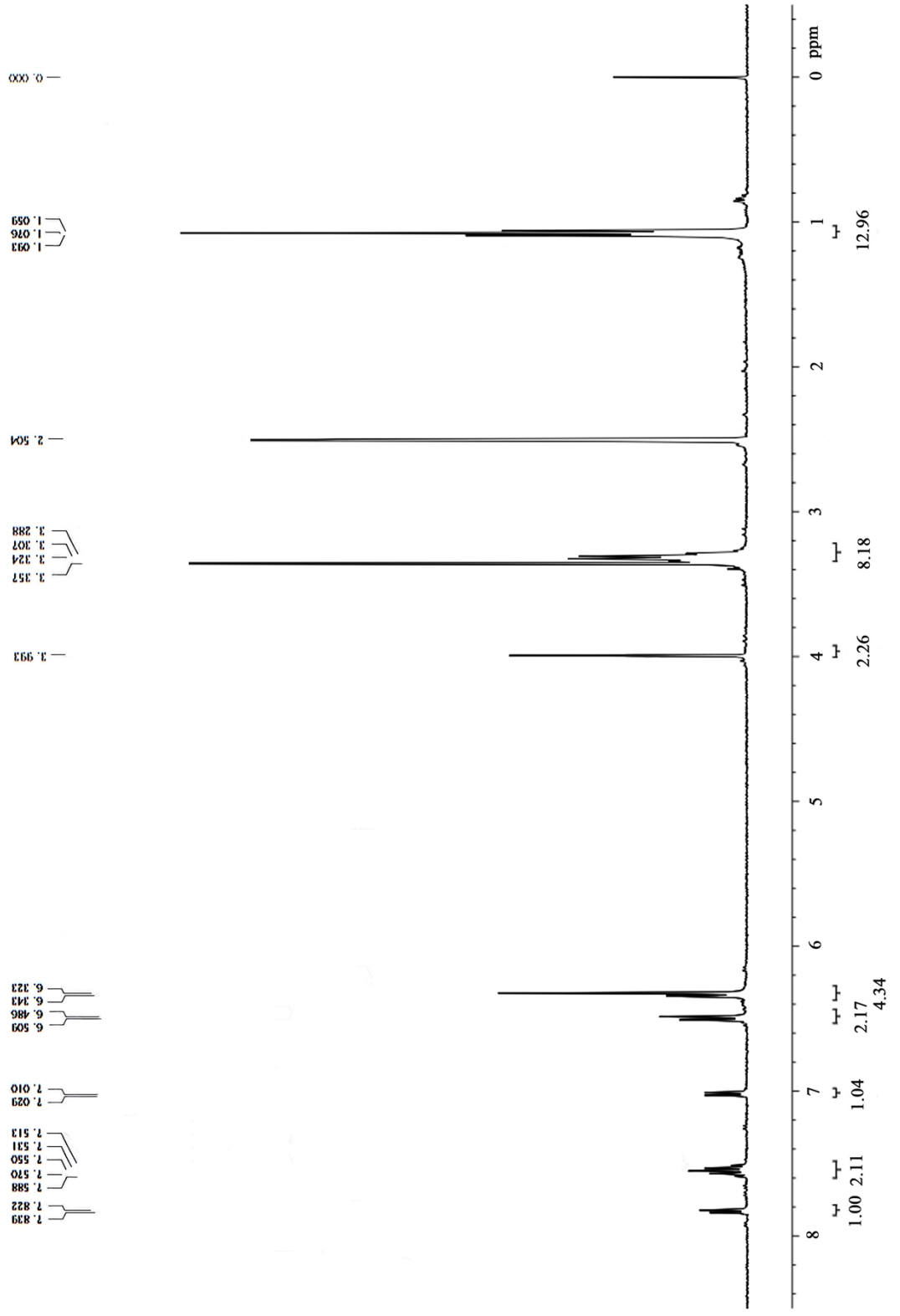


**Fig. S1** $^{1}$H NMR (DMSO, 400 MHz) spectrum of RB-Cl.

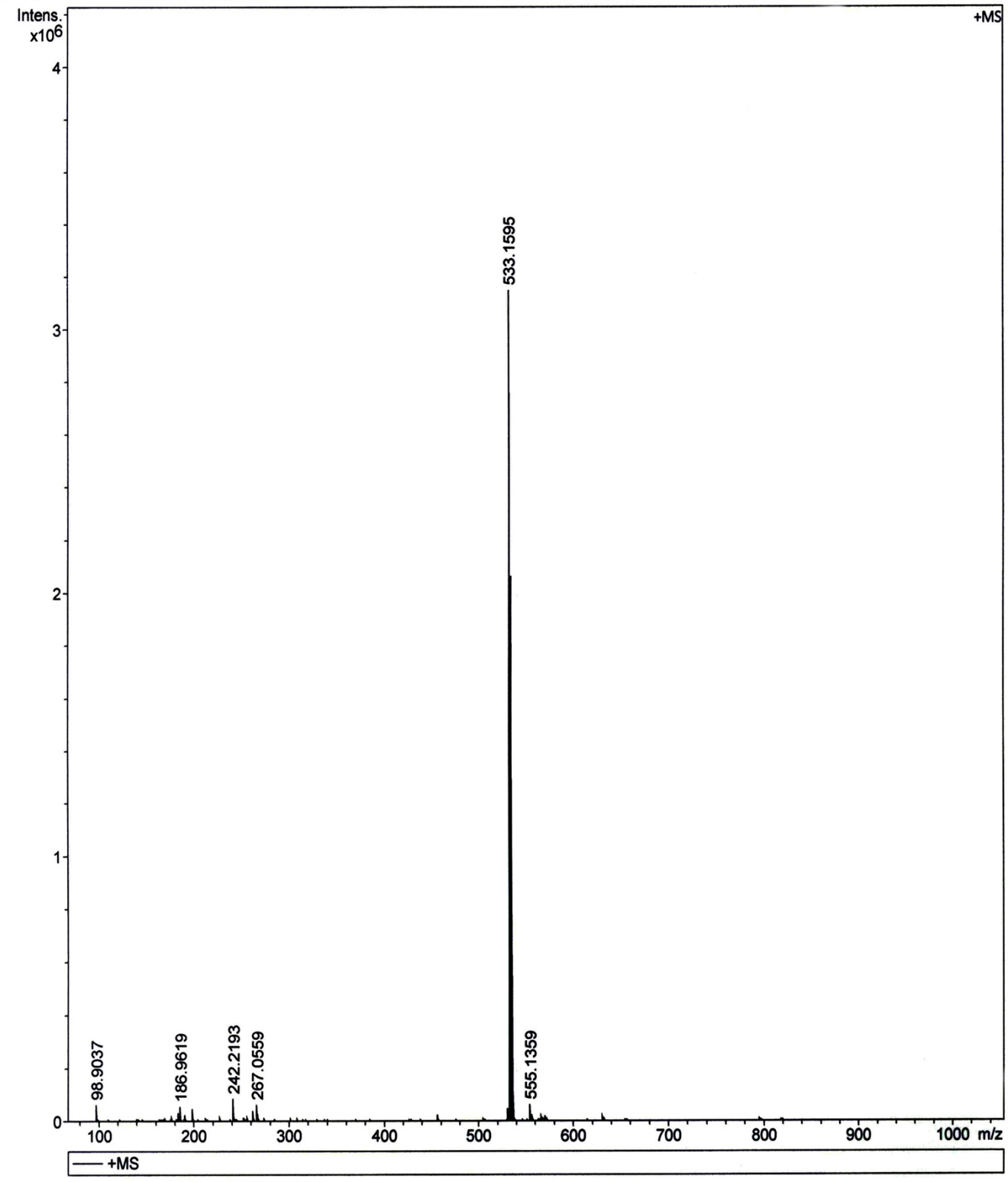


**Fig. S2** ESI-MS spectrum of RB-Cl.

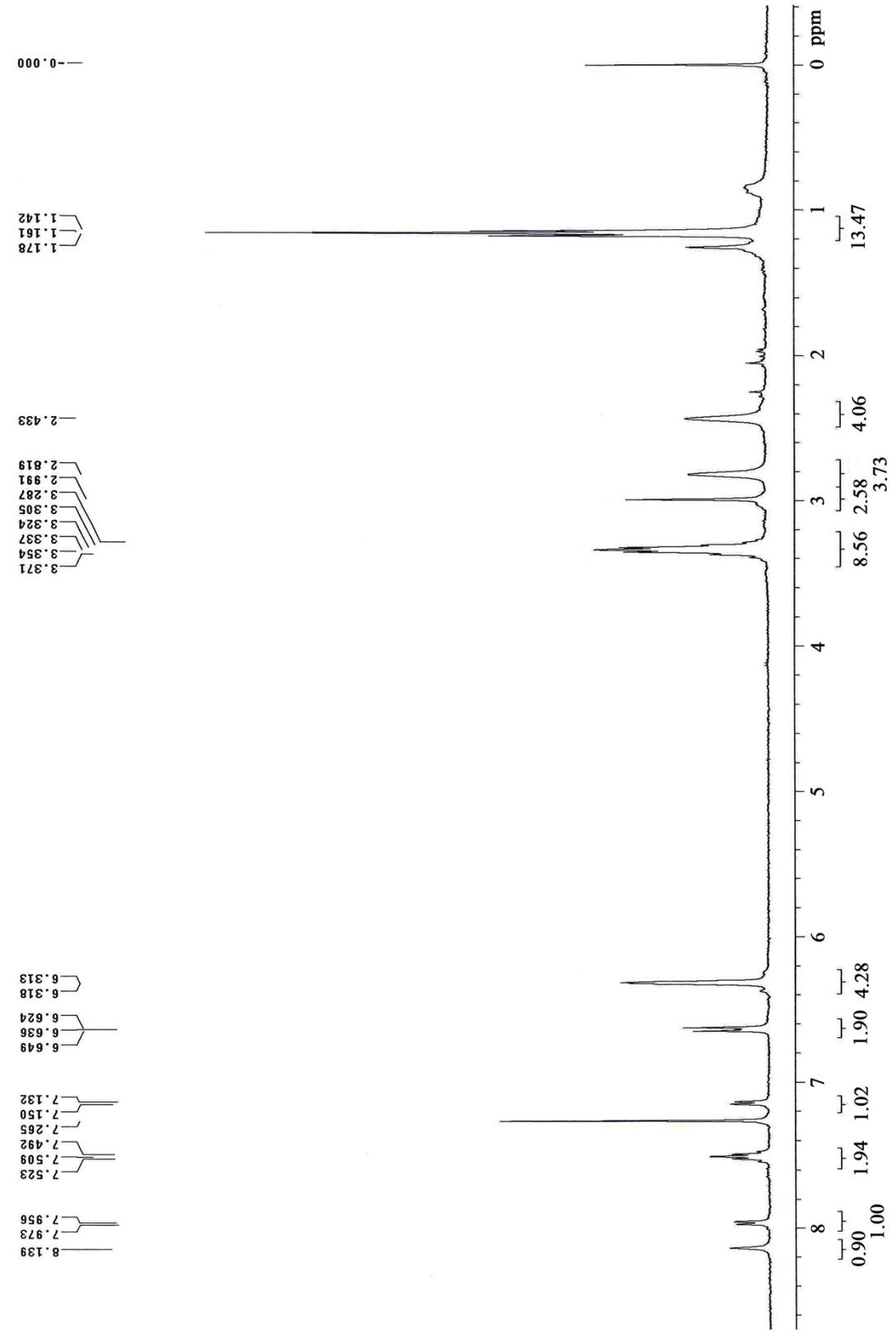


**Fig. S3** $^{1}$H NMR ($CDCl_3$, 400 MHz) spectrum of RB-N.

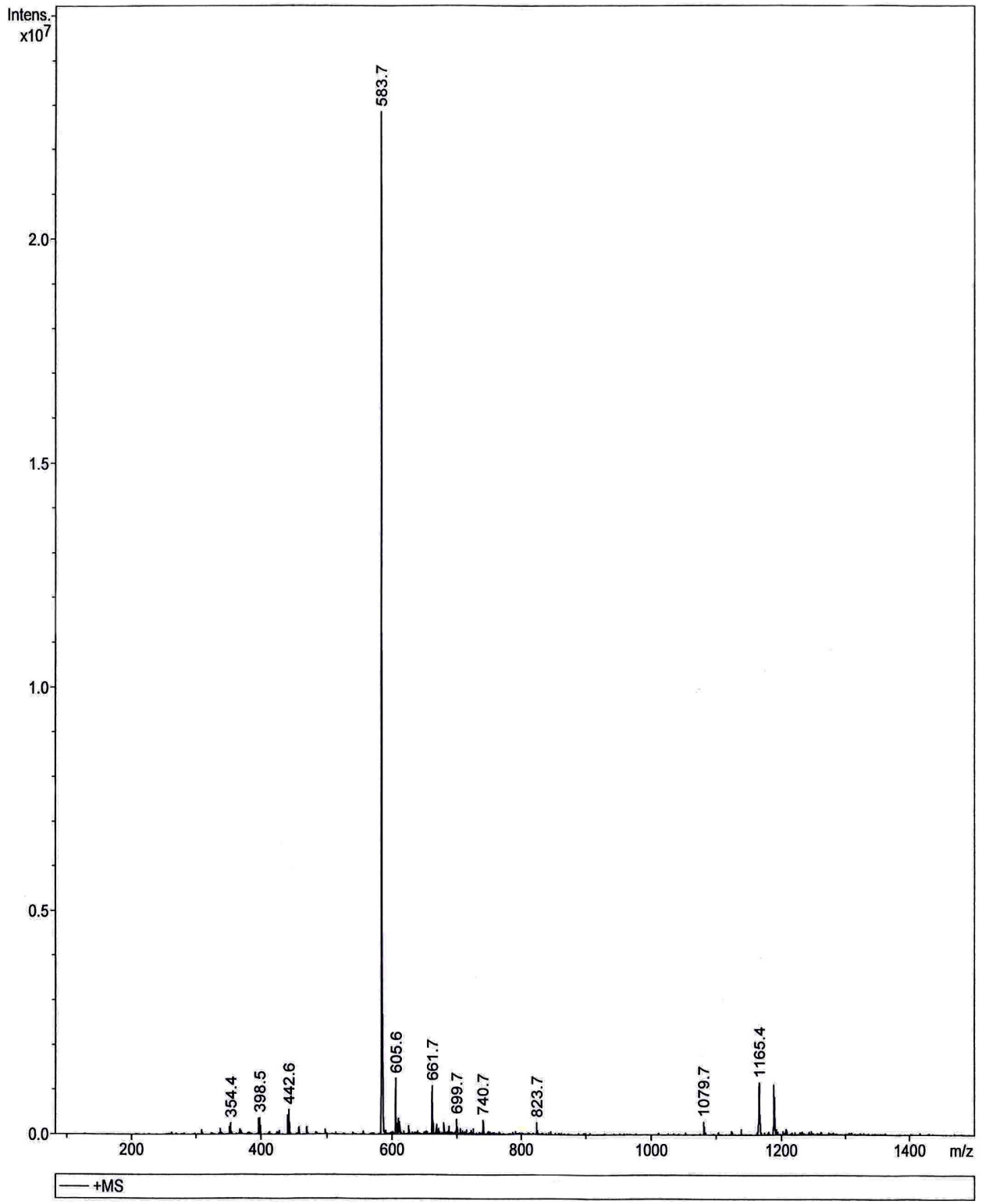


**Fig. S4** ESI-MS spectrum of RB-N.

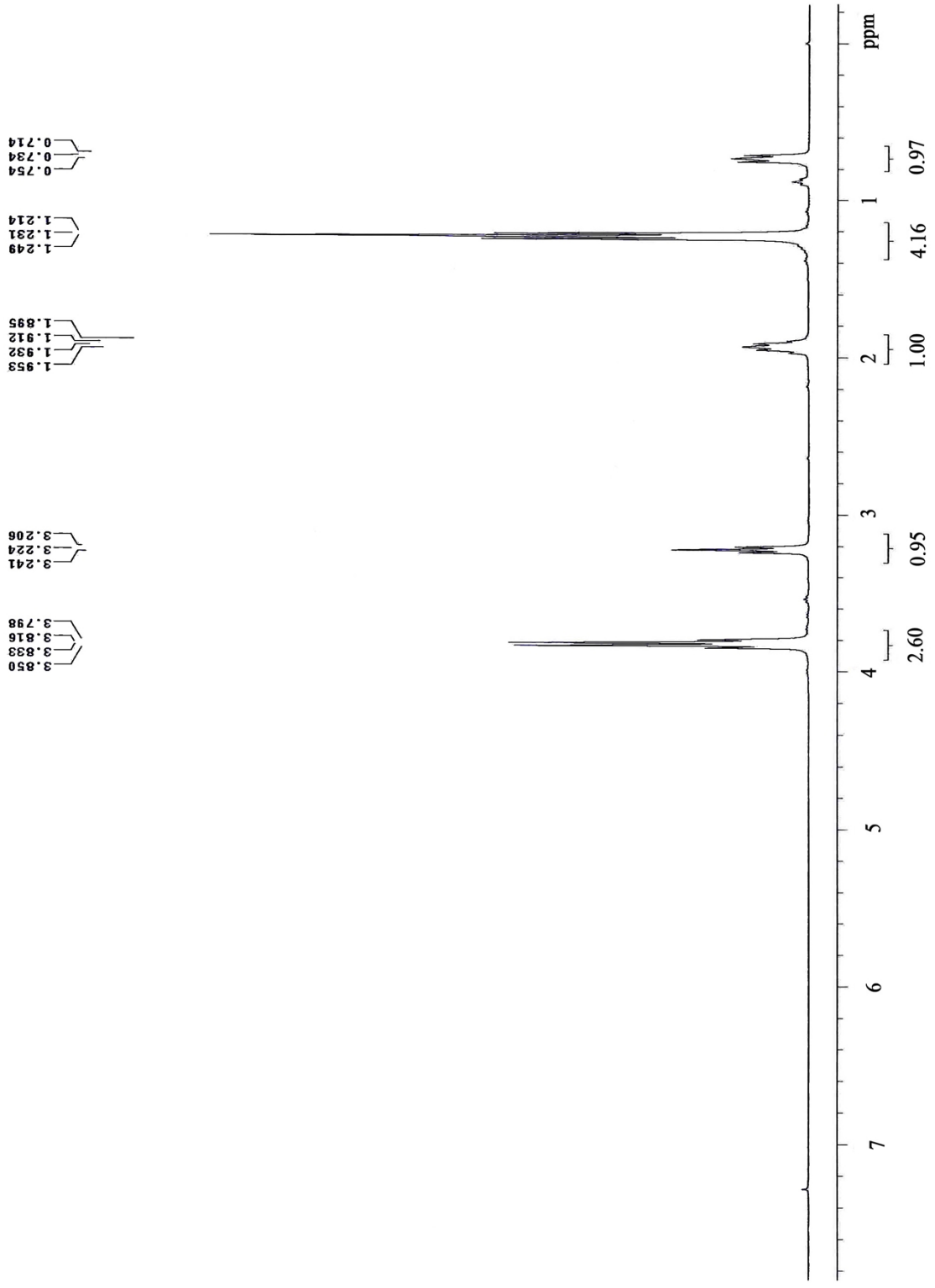


**Fig. S5** $^{1}$H NMR ($CDCl_3$, 400 MHz) spectrum of $ICH_2CH_2CH_2Si(OC_2H_5)_3$

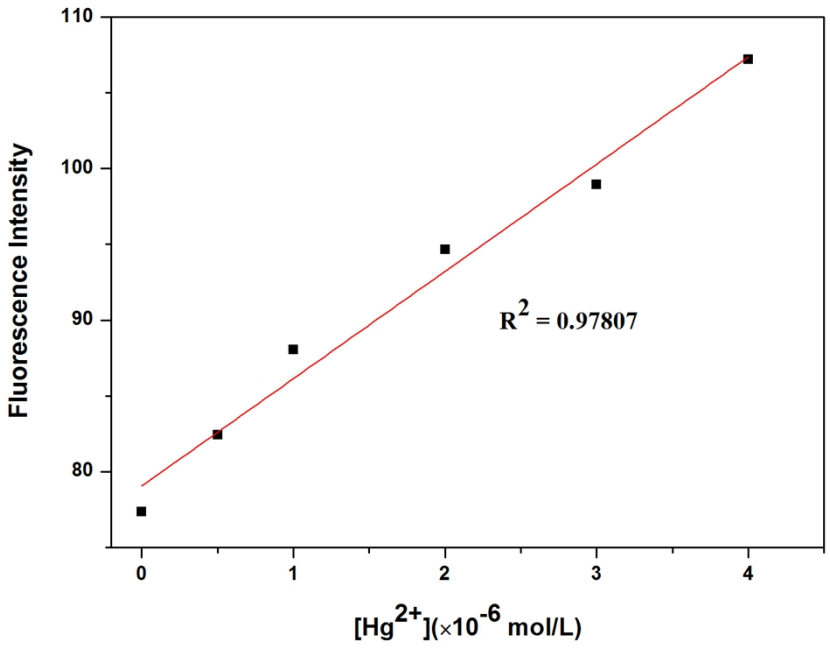


**Fig. S6** Linear fluorescence intensities of **RB-KCC-1** at 589 nm wavelength upon addition of $Hg^{2+}$ (0-4 uM) in drinking water.

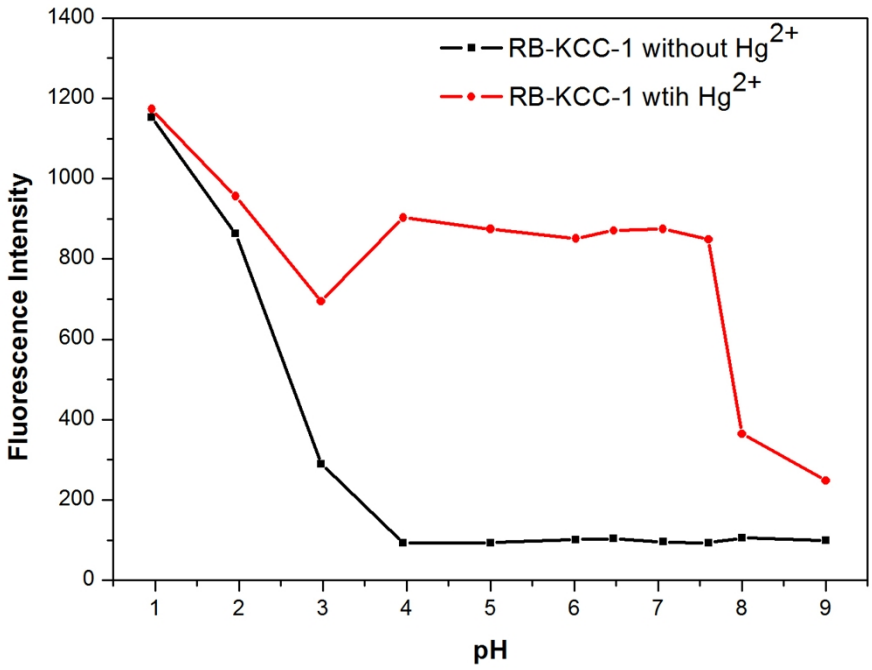


**Fig. S7** Fluorescence intensity of **RB-KCC-1** in ethanol/$H_2O$ (1/1, v/v) with and without $Hg^{2+}$ measured as a function of pH. Different pH valves were achieved by varying the amount of 0.1 M NaOH/HCl added to the solution. $\lambda_{ex}$ = 530 nm, $\lambda_{em}$ = 589 nm.

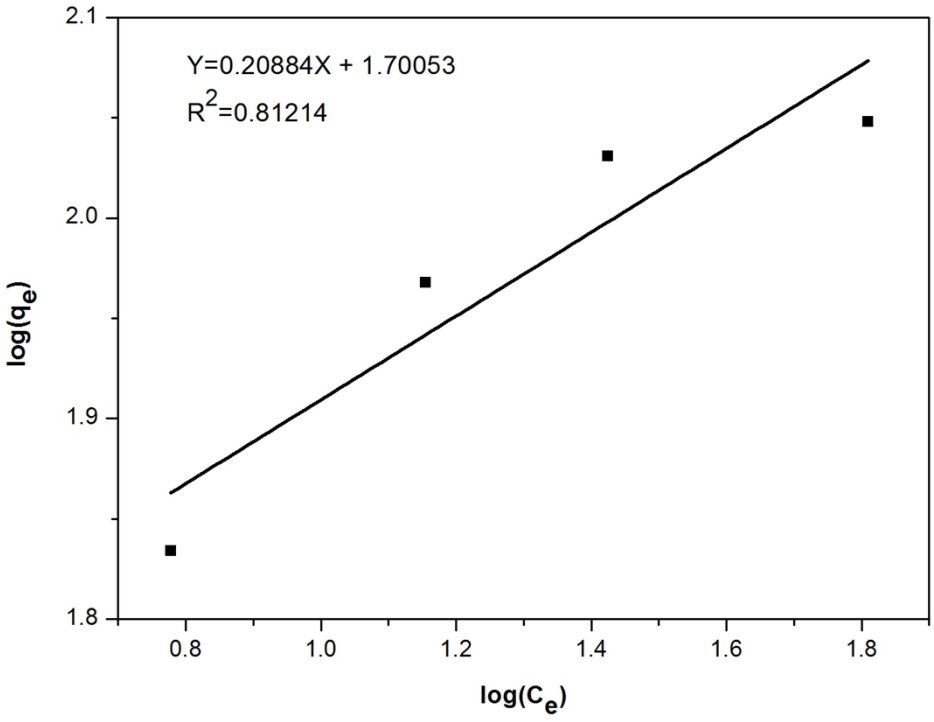


**Fig. S8** Freundlich adsorption isotherm plots for $Hg^{2+}$ adsorption onto **RB-KCC-1**.

**Table S1.** Structural properties of KCC-1 and **RB-KCC-1**

| Samples | $S_{BET}$ ($m^2/g$)[a] | $D_{BJH}$ (nm)[b] | $V_t$ ($cm^3/g$)[c] |
|---|---|---|---|
| KCC-1 | 435 | 15.16 | 1.49 |
| **RB-KCC-1** | 283 | 14.75 | 0.99 |

[a]$S_{BET}$ : BET surface area calculated from data at $P/P_0$ = 0.06-0.29. [b]$D_{BJH}$ : the maximum of the Barret-Joyner-Hellenda (BJH) pore size distribution calculated from the desorption branch of the nitrogen isotherm. [c]$V_t$ : total pore volume calculated at $P/P_0$ at 0.99.

**Table S2.** The parameters of Langmuir and Freundlich isotherms for $Hg^{2+}$ adsorption onto **RB-KCC-1**.

| Adsorption isotherm | parameter | **RB-KCC-1** Value of parameter | $R^2$ |
|---|---|---|---|
| Langmuir | $K_L$ (L $mg^{-1}$) | 0.4299 | 0.9948 |
| | $q_m$ (mg $g^{-1}$) | 115.4734 | |
| Freundlich | $K_F$ (L $g^{-1}$) | 50.1799 | 0.8121 |
| | n | 4.7884 | |