Supplementary Material

A ratiometric fluorescent probe with large Stokes shift for detection of Hg^{2+} and its applications in environmental samples and living systems

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1. Materials

All chemical reagents needed in the synthesis process were of analytical grade without further purification unless otherwise noted. Tetrahydrofuran for spectrum test, absolute ethyl alcohol, ethyl acetate, Boron oxide, Tributyl borate, butylamine was purchased from Adamas Co, Ltd. All the deionized water was adopted for preparing the aqueous solution. NMR spectra were recorded on a Bruker AV 400 spectrometer. High-resolution mass spectra (HRMS) spectra were acquired by using an America Agilent 5975c mass spectrometer. The ultraviolet-visible (UV-vis) absorption spectra were tested by using Shimadzu UV-2450 spectrophotometer. The fluorescence spectra were measured by PerkinElmer LS55 spectrophotometer. Fluorescent images were taken using a Carl Zeiss LSM-710 confocal laser scanning fluorescence microscope.

2. The characterization data of ^{1}H NMR and ^{13}C NMR

The shown of characterization data with ^{1}H NMR and ^{13}C NMR: ^{1}H NMR (600 MHz, DMSO-d_6) δ: 11.12 (s, 1H), 8.77 (s, 1H), 7.81 (d, J = 8.6 Hz, 1H), 7.63 (d, J = 8.4 Hz, 2H), 7.57 (d, J = 15.7 Hz, 1H), 7.36 (t, J = 7.7 Hz, 4H), 7.15 (t, J = 7.4 Hz, 2H), 7.10 (d, J = 7.9 Hz, 4H), 7.02 (s, 1H), 6.89–6.82 (m, 4H), 6.77 (s, 1H). ^{13}C NMR (150 MHz, DMSO-d_6) δ: 183.10, 181.34, 164.78, 158.68, 157.28, 149.88, 147.61, 146.70, 140.91, 132.93, 130.52, 130.27, 127.98, 125.83, 124.89, 121.73, 121.06, 116.51, 114.79, 111.69, 102.23, 101.27.

3. Figures

Fig. S1 ^{1}H NMR spectra of compound **CMT**.

Fig. S2 ^{1}C NMR spectra of compound **CMT**.

Fig. S3 HRMS of compound **CMT**

Fig. S4 (a) The intensity of fluorescence ratio versus time of **CMT** with and without Hg^{2+} within deionized water/THF (v/v = 8/2); (b)The intensity of fluorescence ratio photostability of **CMT** with and without Hg^{2+} within deionized water/THF (v/v = 8/2) (c) Fluorescence intensity ratio versus pH of **CMT** with and without Hg^{2+} ions in deionized water/THF solution (v/v = 8/2)

Fig. S5 (a) Job's plot curve for the **CMT**-Hg^{2+} complexes; (b) HRMS of compound **CMT**-Hg^{2+}.

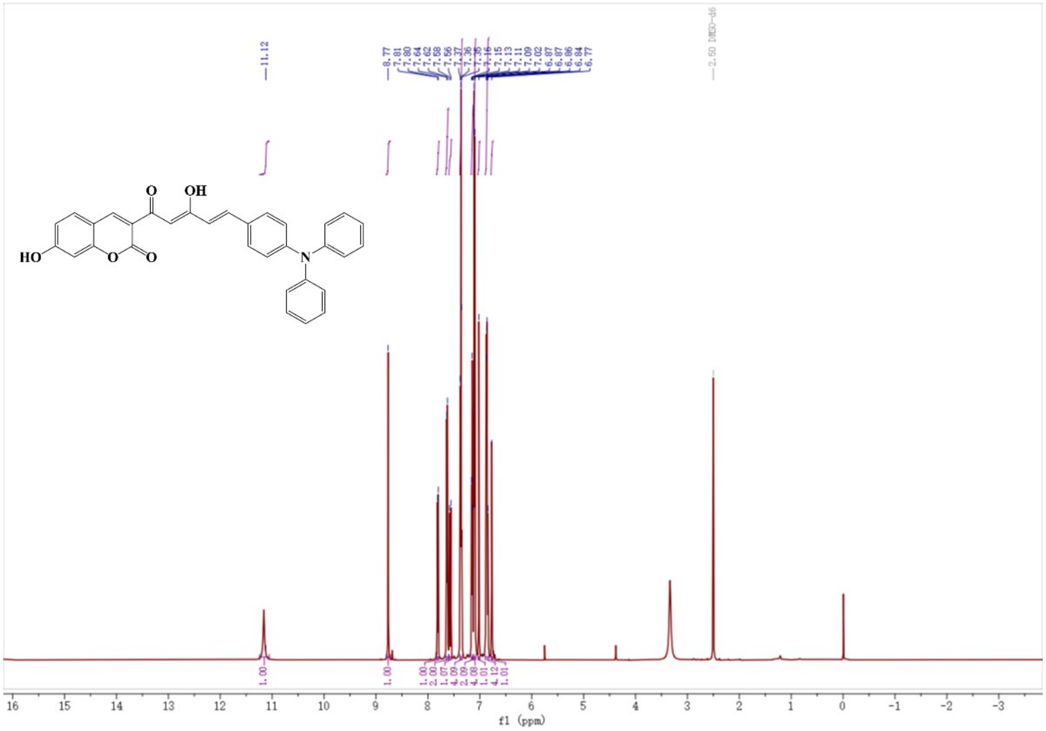


Fig. S1 ^{1}H NMR spectra of compound **CMT**.

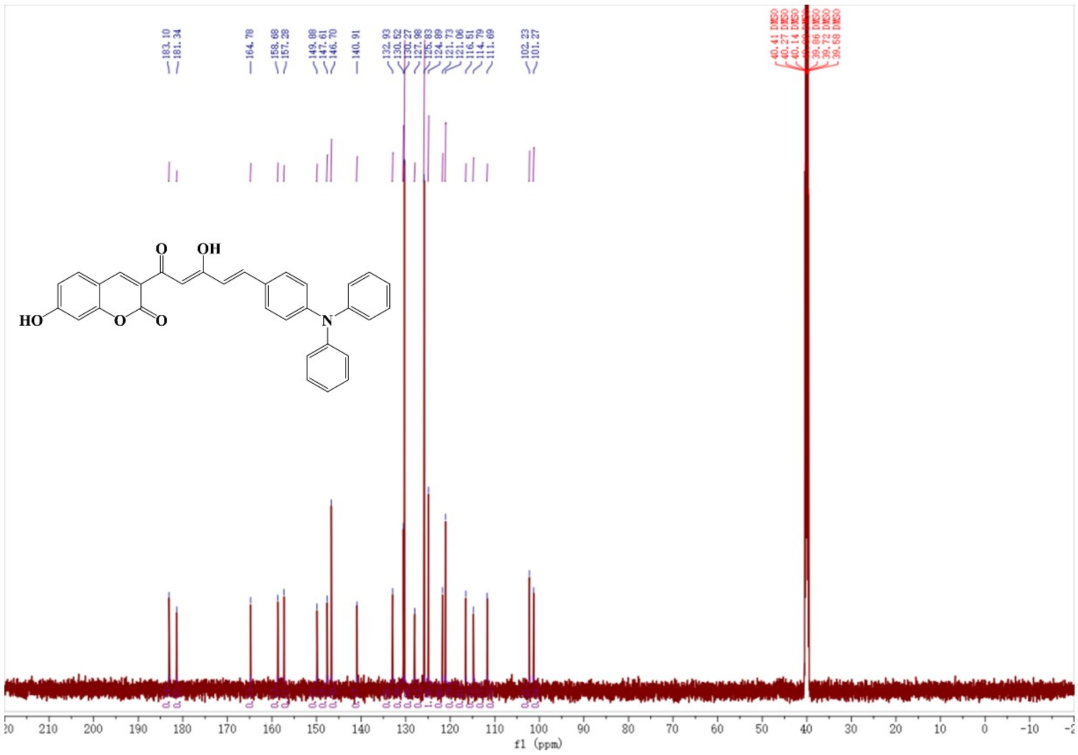


Fig. S2 ^{1}C NMR spectra of compound **CMT**.

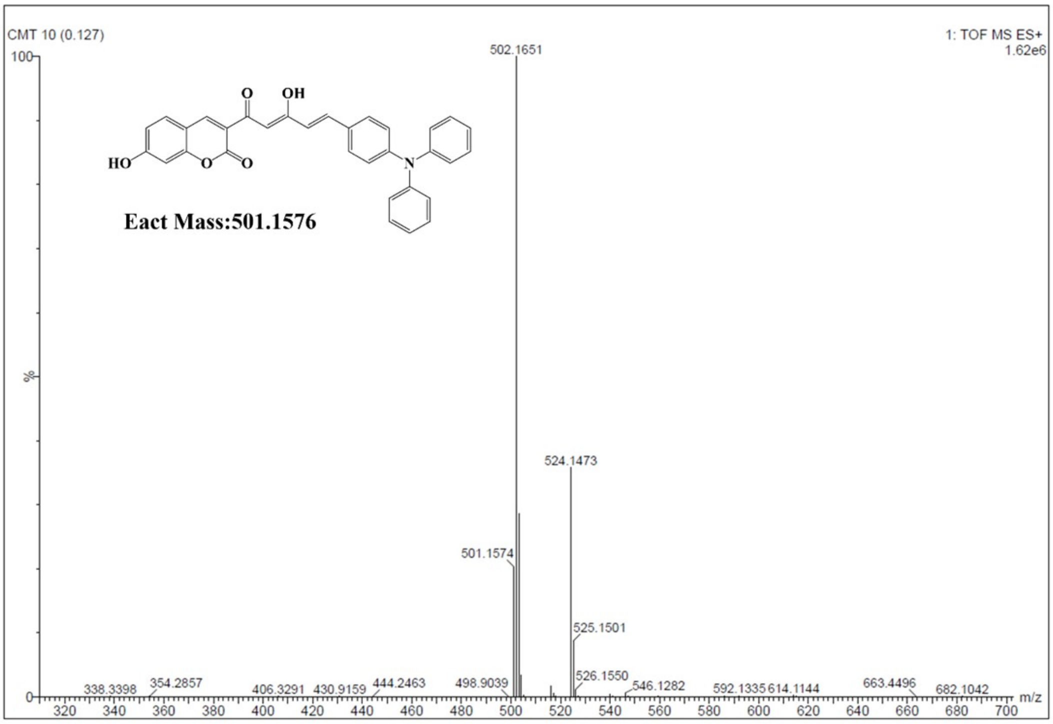


Fig. S3 HRMS of compound **CMT**

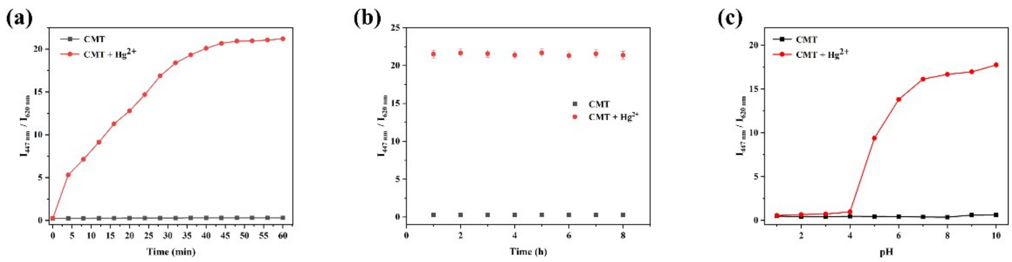
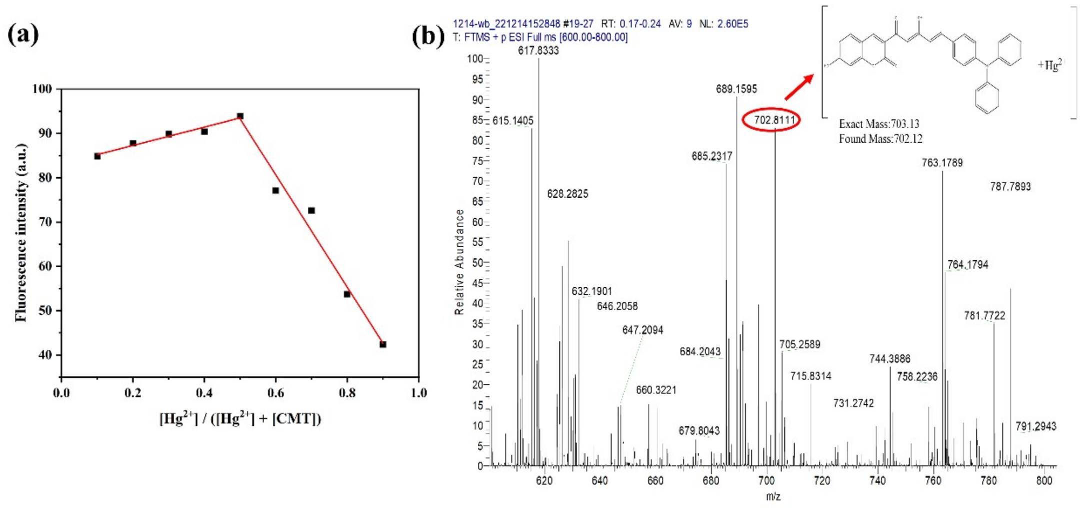


Fig. S4 (a) The intensity of fluorescence ratio versus time of **CMT** with and without Hg^{2+} within deionized water/THF (v/v = 8/2); (b)The intensity of fluorescence ratio photostability of **CMT** with and without Hg^{2+} within deionized water/THF (v/v = 8/2) (c) Fluorescence intensity ratio versus pH of **CMT** with and without Hg^{2+} ions in deionized water/THF solution (v/v = 8/2).



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