

Supporting Information

A smart two-photon fluorescent platform based on desulfurization-cyclization: phthalimide-rhodamine chemodosimeter for Hg²⁺, NIR emission at 746 nm and through-bond energy transfer

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Fig. S1. ¹H-NMR spectrum of CyRSN.

Fig. S2. ¹³C-NMR spectrum of CyRSN.

Fig. S3. MS spectrum of CyRSN.

Fig. S4. ¹H-NMR spectrum of M₂.

Fig. S5. ¹³C-NMR spectrum of M₂.

Fig. S6. MS spectrum of M₂.

Fig. S7. ¹H-NMR spectrum of M₃ (CyR).

Fig. S8. ¹³C-NMR spectrum of M₃ (CyR).

Fig. S9. ¹H-NMR spectrum of NG-ML.

Fig. S10. The linear relationship between the fluorescence intensity of probe at 746 nm and Hg²⁺ in concentration within the range 0-10 μM and 30-50 μM.

Fig. S11. (a) Fluorescence ratio response (F_{746 nm}/F_{540 nm}) of free CyRSN (10 μM) and after addition of Hg²⁺ (30 μM) in a PBS buffer-MeOH (v/v = 50/50, 50 mM PBS) solution as a function of different pH values. The excitation wavelength was 390 nm; (b) time-dependence on the fluorescence intensity at 746 nm of CyRSN (10 μM) upon addition of 2.0 equiv. of Hg²⁺ at room temperature; in EtOH/PBS buffer solutions (pH 7.4, v/v, 1 : 1). Excitation wavelength was 670 nm.

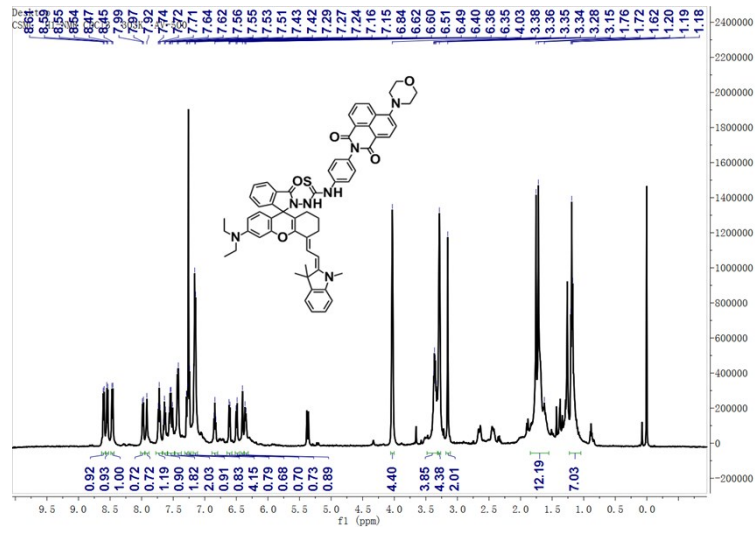


Fig. S1. ¹H-NMR spectrum of CyRSN.

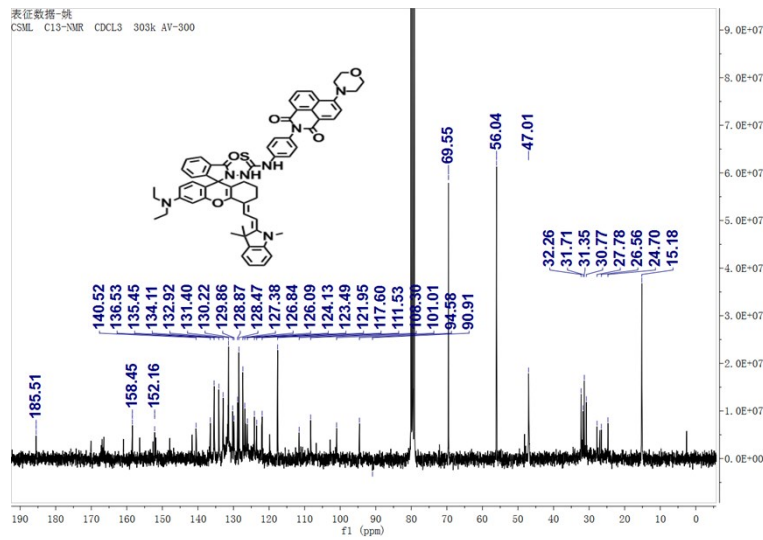


Fig. S2. ¹³C-NMR spectrum of CyRSN.

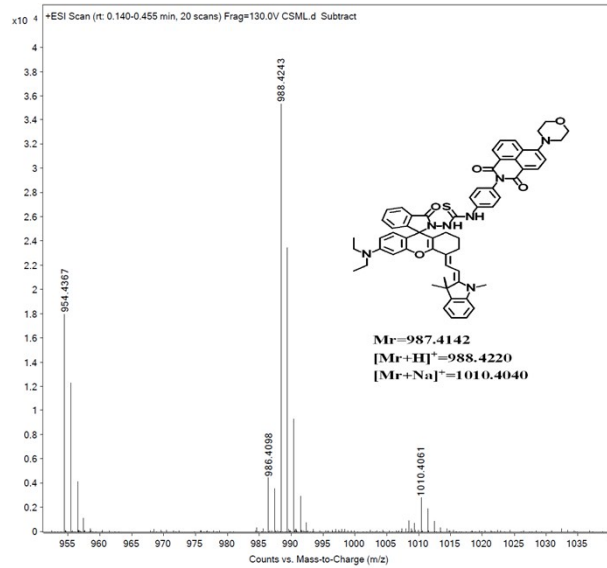


Fig. S3. MS spectrum of CyRSN.

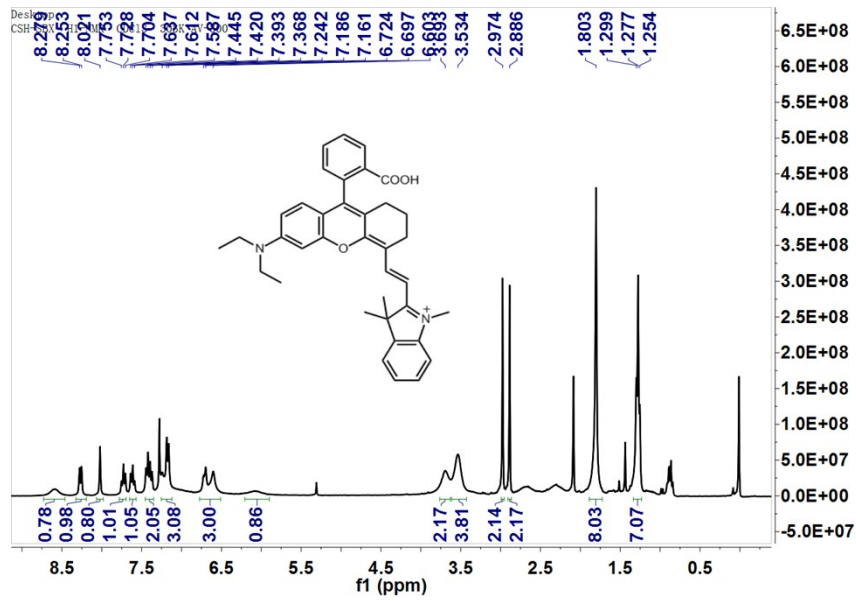


Fig. S4. ¹H-NMR spectrum of M₂.

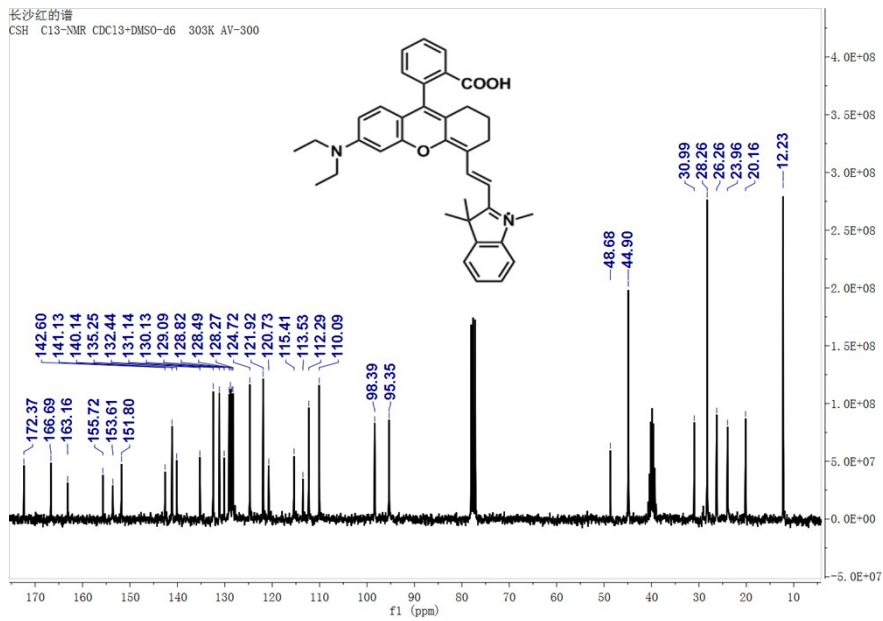


Fig. S5. ¹³C-NMR spectrum of M₂.

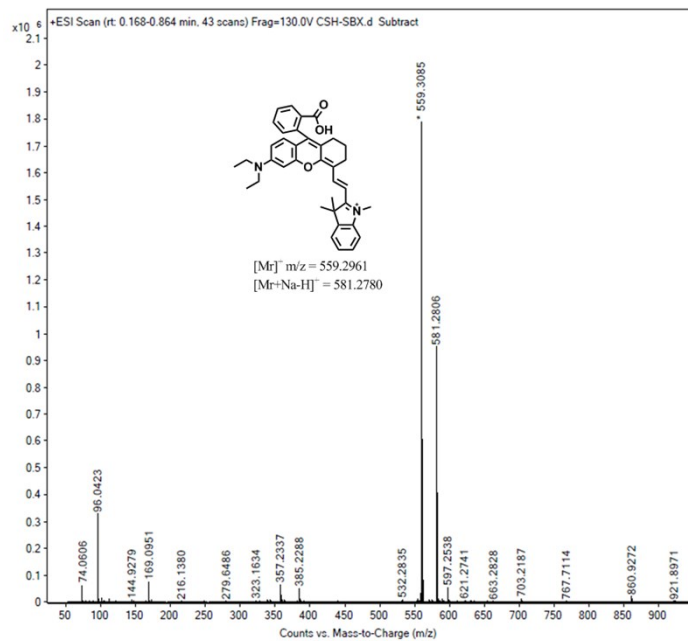


Fig. S6. MS spectrum of M_2 .

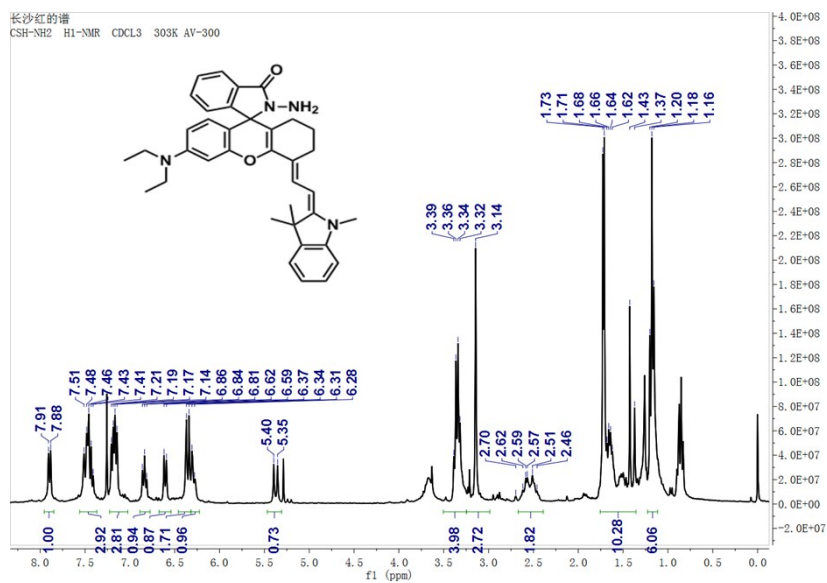


Fig. S7. $^1\text{H-NMR}$ spectrum of M_3 (CyR).

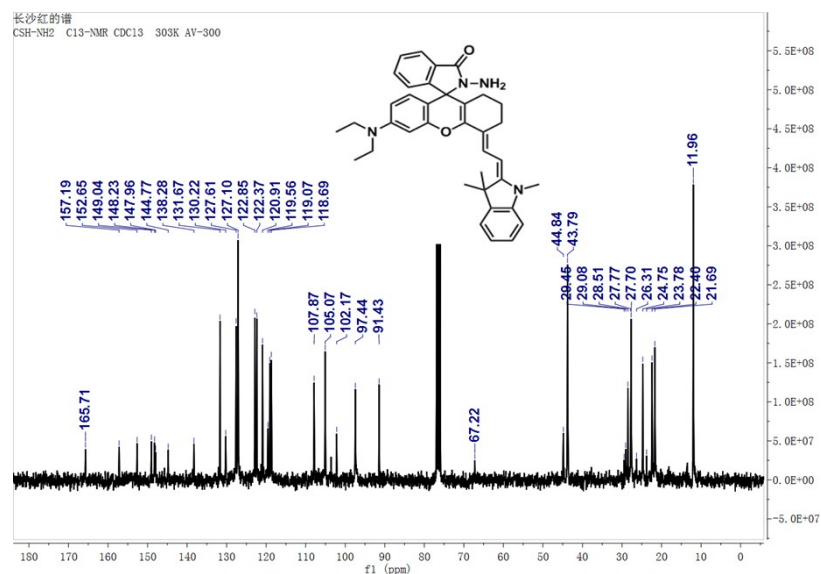


Fig. S8. ^{13}C -NMR spectrum of M₃ (CyR).

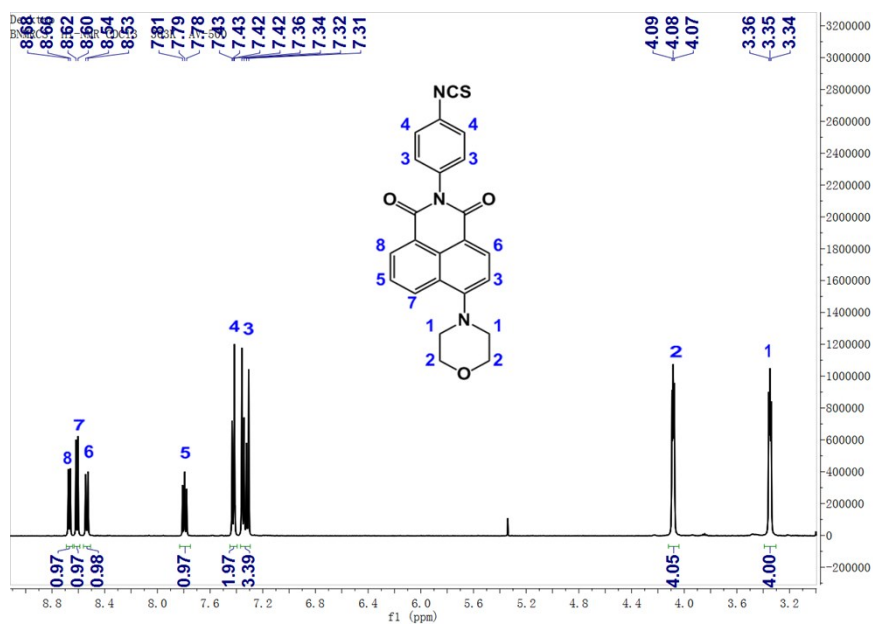


Fig. S9. ^1H -NMR spectrum of NG-ML.

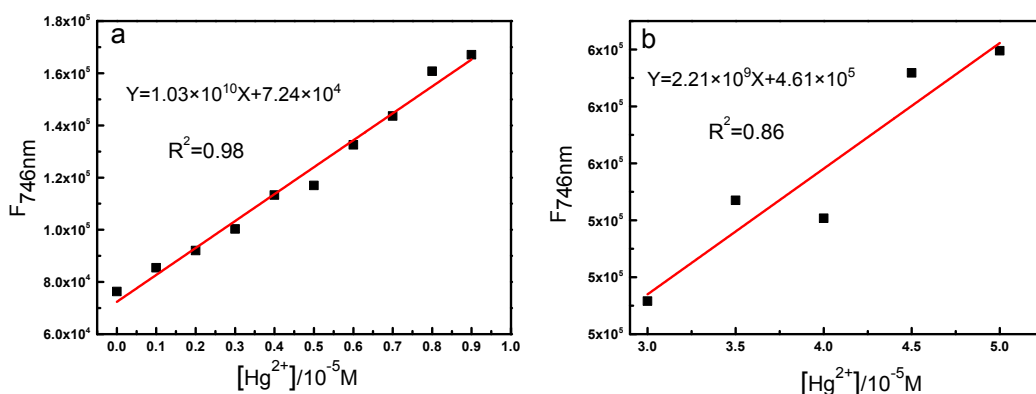


Fig. S10. The linear relationship between the fluorescence intensity of probe at 746 nm and Hg^{2+} in concentration within the range (a) 0-10 μM and (b) 30-50 μM .

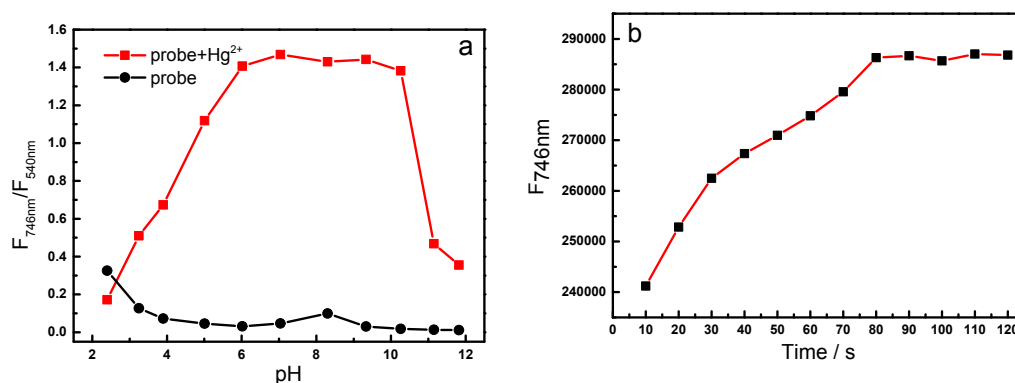


Fig. S11. (a) Fluorescence ratio response ($F_{746\text{ nm}}/F_{540\text{ nm}}$) of free CyRSN (10 μM) and after addition of Hg^{2+} (30 μM) in a PBS buffer-MeOH (v/v = 50/50, 50 mM PBS) solution as a function of different pH values. The excitation wavelength was 390 nm; (b) time-dependence on the fluorescence intensity at 746 nm of CyRSN (10 μM) upon addition of 2.0 equiv. of Hg^{2+} at room temperature; in EtOH/PBS buffer solutions (pH 7.4, v/v, 1 : 1). Excitation wavelength was 670 nm.