

A new near-infrared ratiometric fluorescent probe for hydrazine

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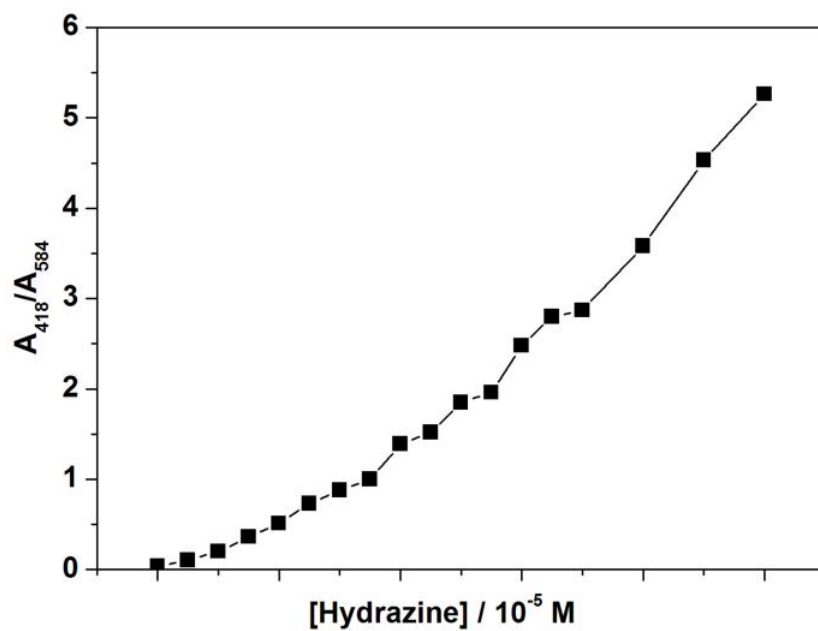


Fig. S1 Absorbance of compound **1** [1.0×10^{-5} M in 5:5 (v/v) 0.01M HEPES/DMSO pH 7.4] (black circle) as a function of addition of hydrazine water solution. A_{418} and A_{584} represent the absorbance at 418 nm and 584 nm. The reaction time is 24 hour.

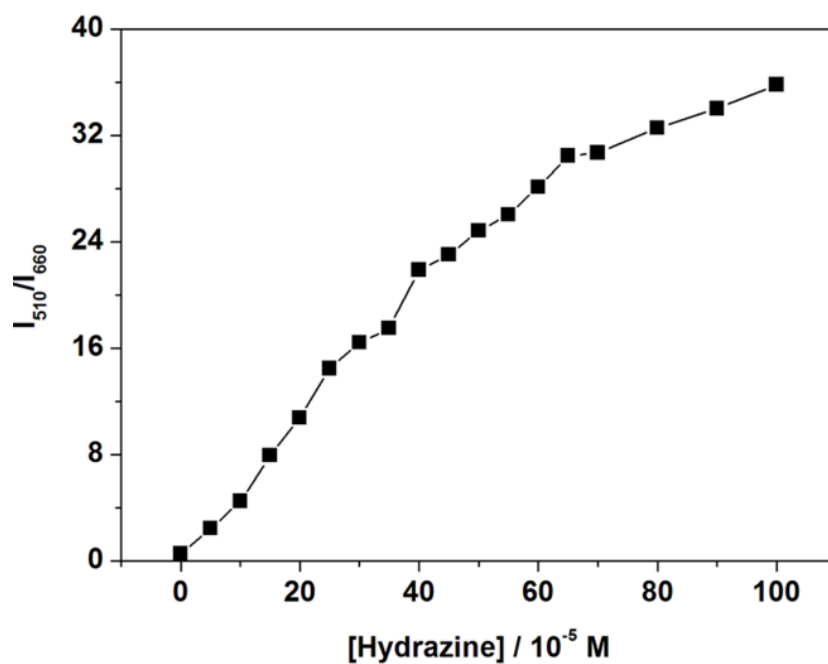


Fig. S2 The relationship of ratiometric fluorescence change of probe **1** [1.0×10^{-5} M in 5:5 (v/v) 0.01 M HEPES/DMSO, pH 7.4] with the concentration of hydrazine upon excitation at 450 nm. I_{510} and I_{660} represent the emission intensity of probe **1** at 510 nm and 660 nm respectively.

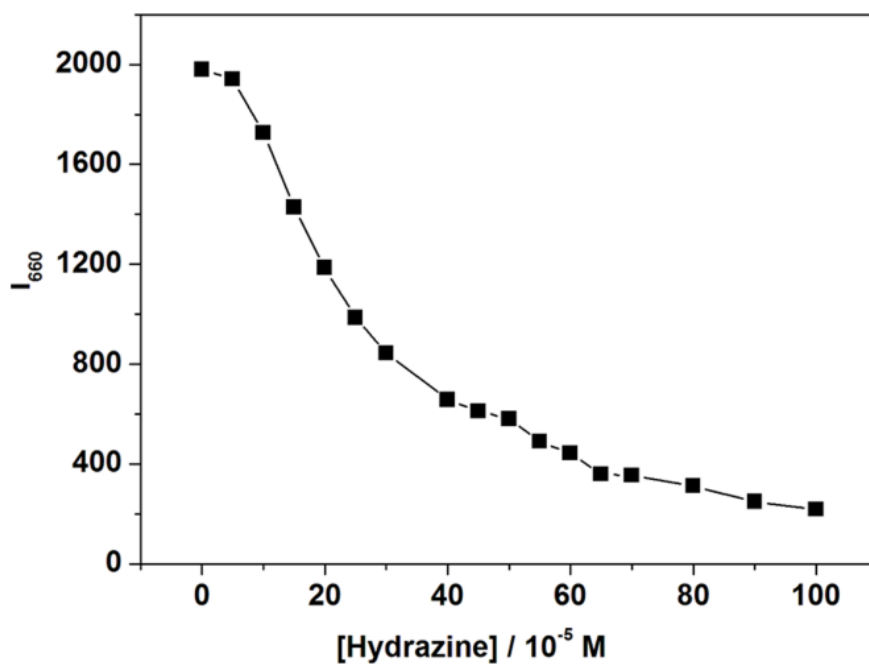


Fig. S3 The relationship of fluorescence change at 660 nm of probe **1** [1.0×10^{-5} M in 5:5 (v/v) 0.01M HEPES/DMSO pH 7.4] with the concentration of hydrazine upon excitation at 5100 nm. I_{660} represents the emission intensity of probe **1** at 660 nm.

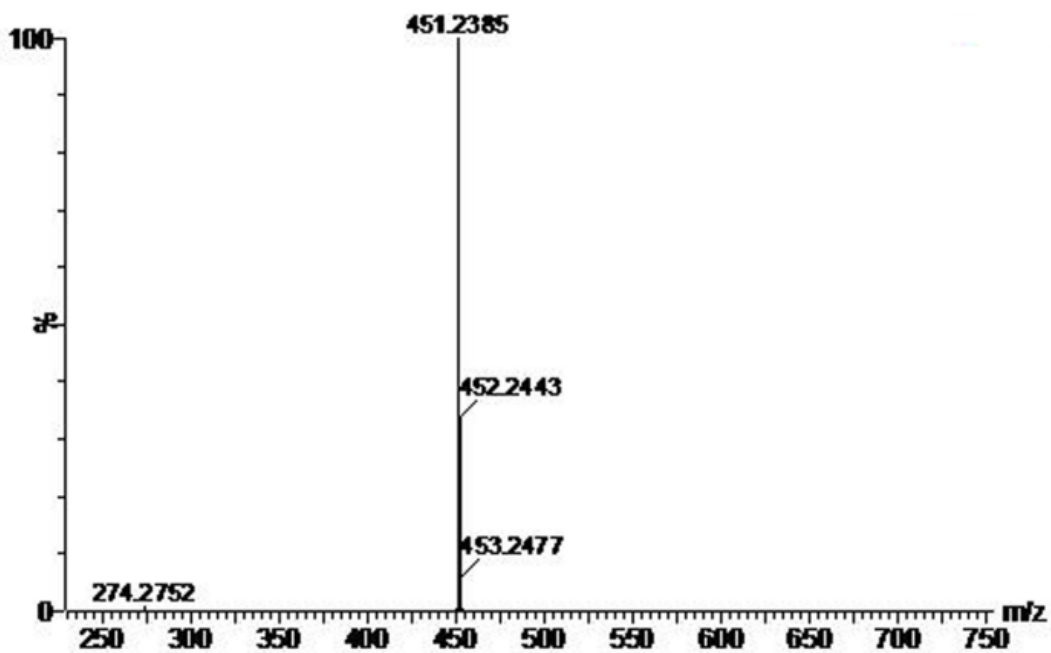


Fig. S4 HRMS spectrum of probe **1**.

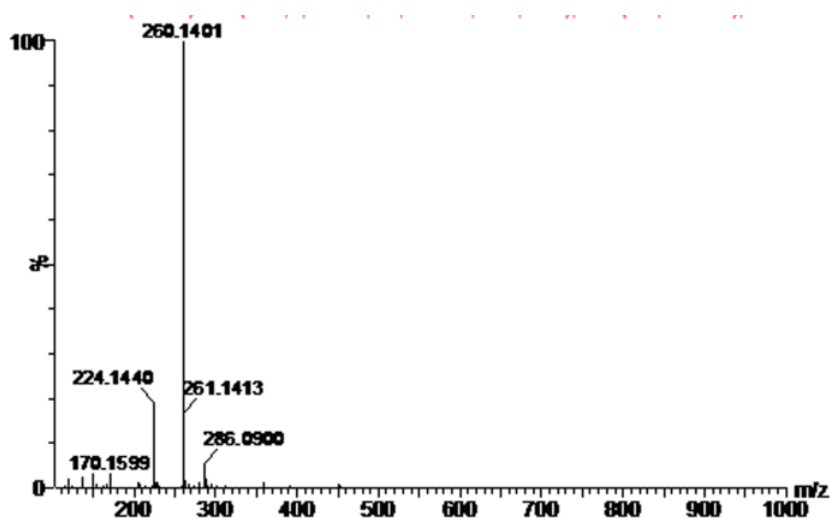


Fig. S5 HRMS spectrum of probe **1** reaction with hydrazine.

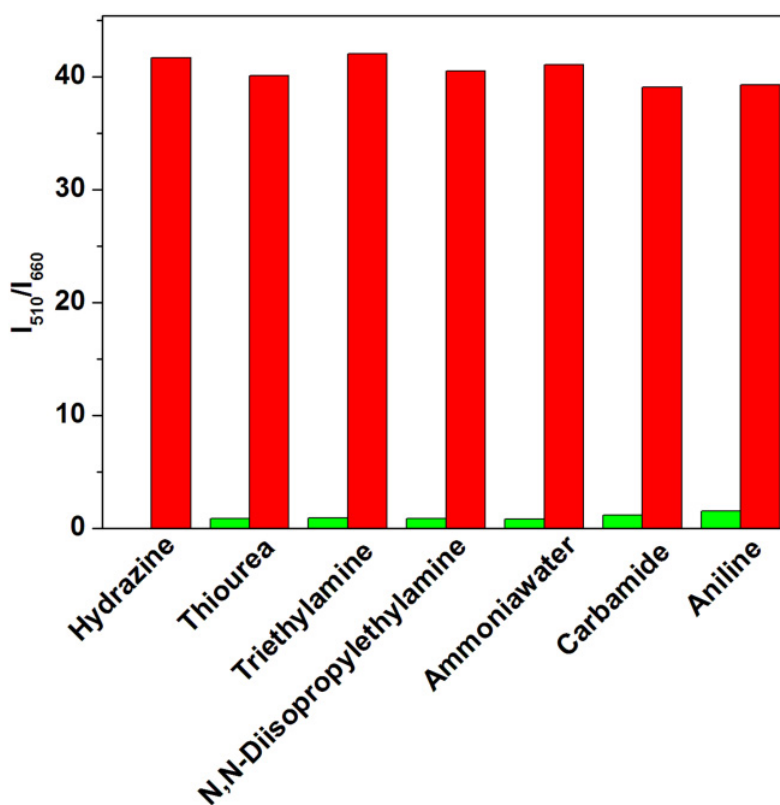


Fig. S6 Fluorescence responses of **1** [1.0×10^{-5} M in 5:5 (v/v) 0.01M HEPES/DMSO pH 7.4] upon addition of different species (100 equiv of species relative to **1**) (green bars) with excitation at 450 nm, and fluorescence changes of the mixture of **1** and hydrazine (1.0×10^{-3} M in water) after addition of an excess of the indicated species (100 equiv relative to **1**) (red bars) with excitation at 450 nm. I_{510} and I_{660} represent the emission intensity at 510 nm. Intensity means the emission intensity at 660 nm. The species used were thiourea, triethylamine, N,N-diisopropylethylamine, ammonia water, carbamide, aniline.

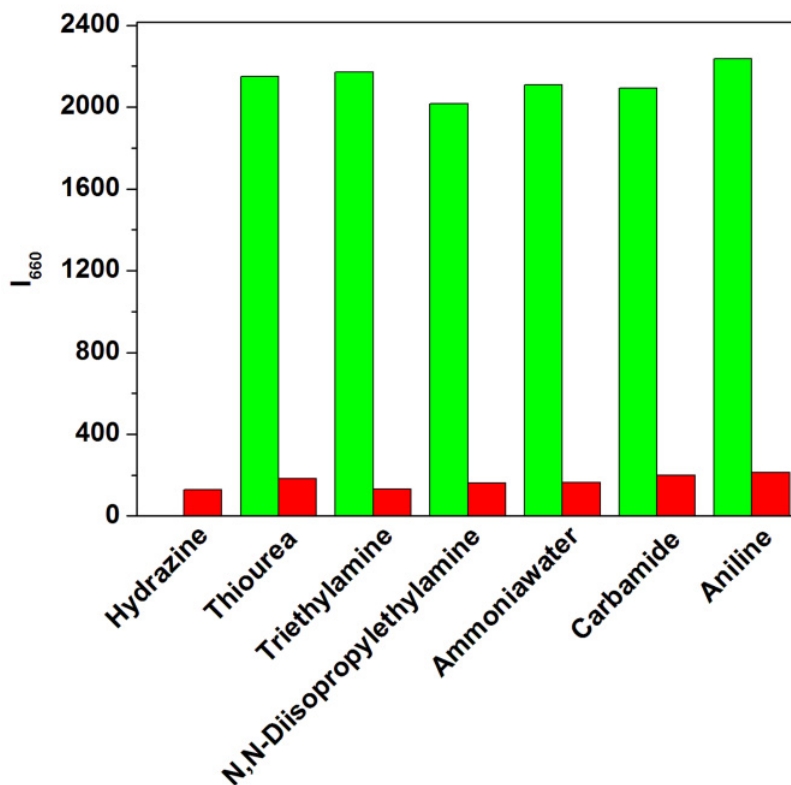


Fig. S7 Fluorescence responses of **1** [1.0×10^{-5} M in 5:5 (v/v) 0.01M HEPES/DMSO pH 7.4] upon addition of different species (100 equiv of species relative to **1**) (green bars) with excitation at 580 nm, and fluorescence changes of the mixture of **1** and hydrazine (1.0×10^{-3} M in water) after addition of an excess of the indicated species (100 equiv relative to **1**) (red bars) with excitation at 580 nm. I_{660} represent the emission intensity at 660 nm. Intensity means the emission intensity at 660 nm. The species used were thiourea, triethylamine, N,N-diisopropylethylamine, ammonia water, carbamide, aniline.

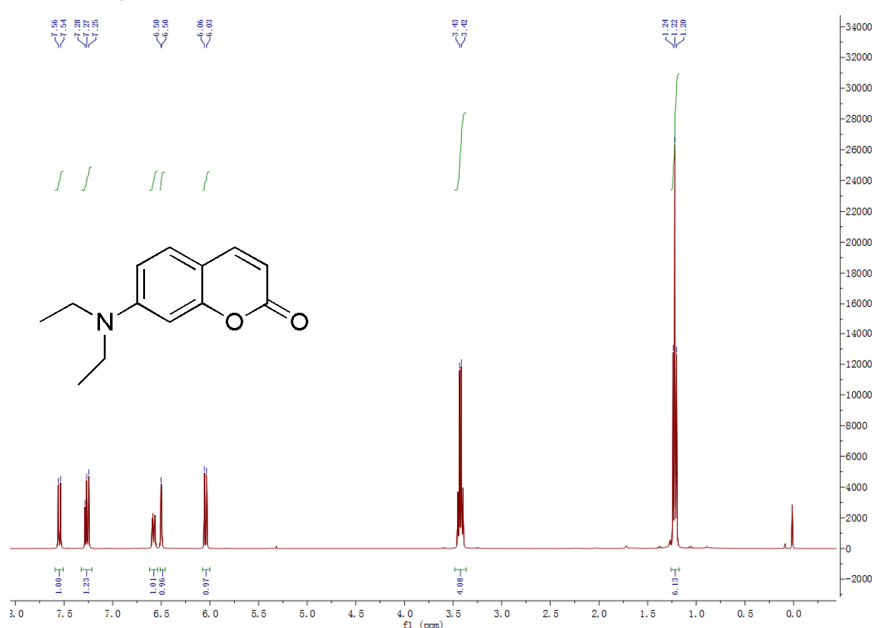


Fig. S8 ^1H NMR spectrum of compound **4**.

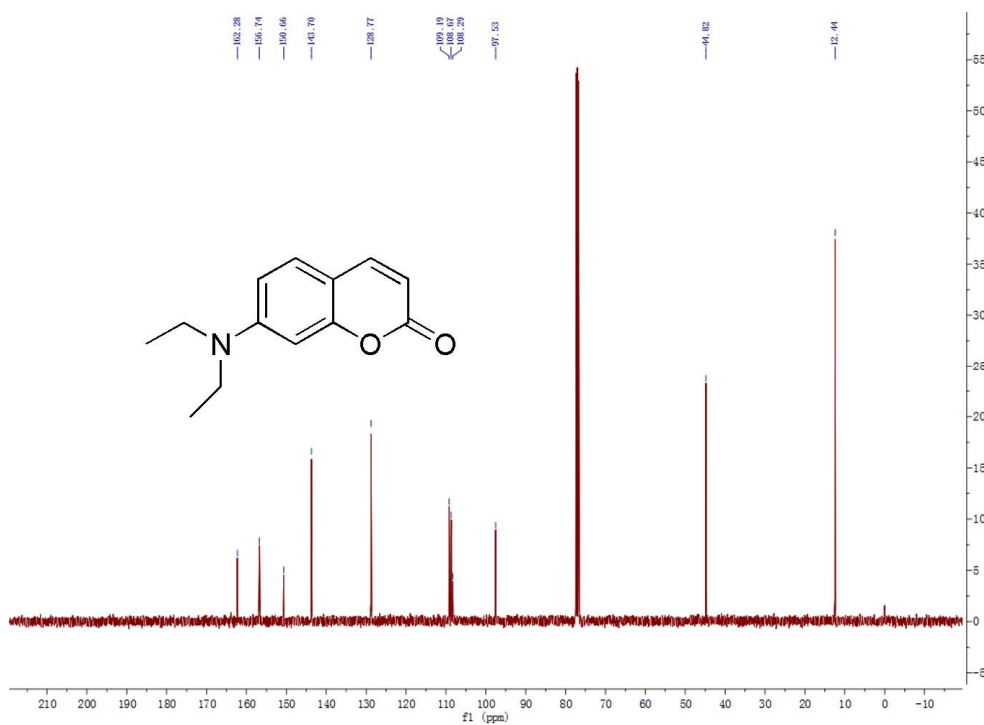


Fig. S9 ^{13}C NMR spectrum of compound 4.

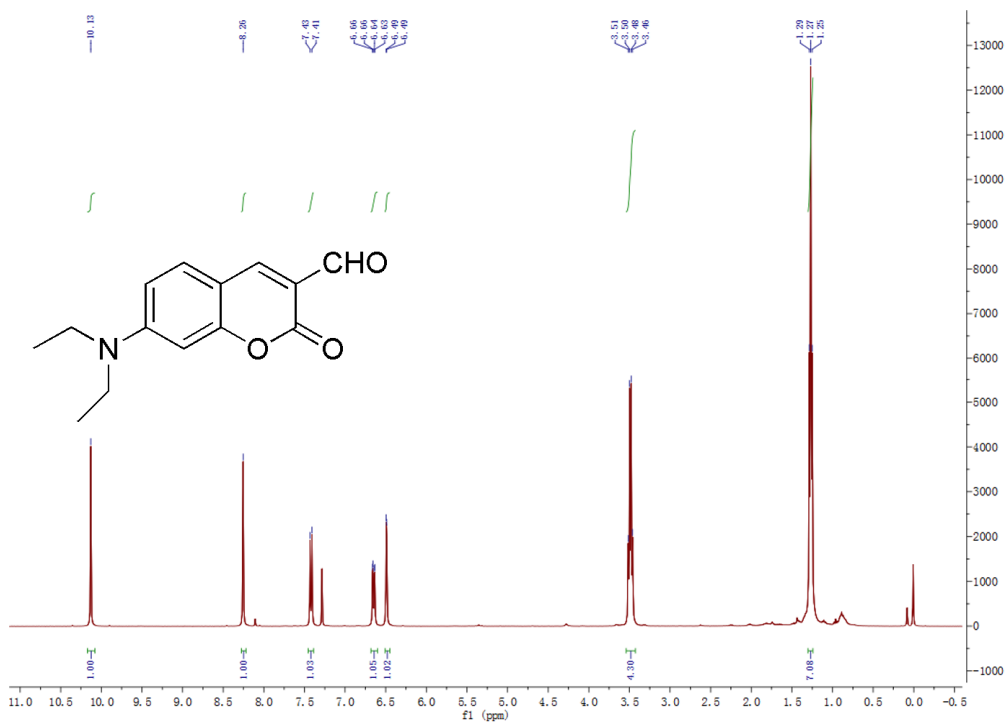


Fig. S10 ^1H NMR spectrum of compound 3.

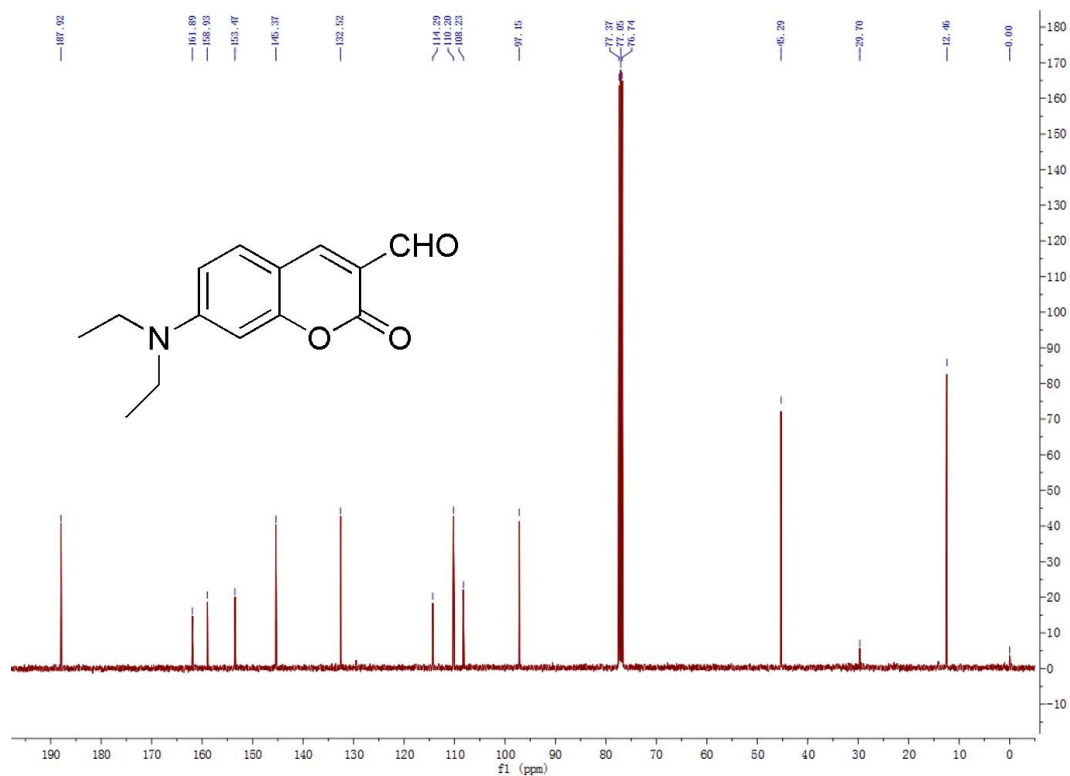


Fig. S11 ^{13}C NMR spectrum of compound 3.

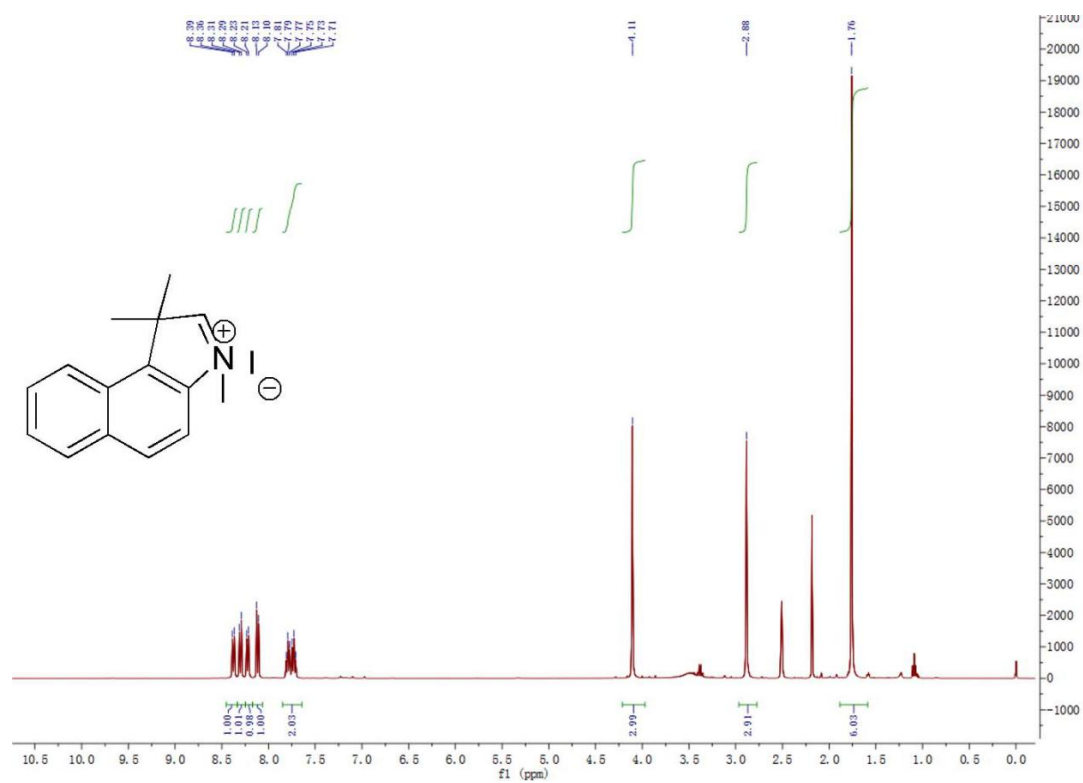


Fig. S12 ^1H NMR spectrum of compound 2.

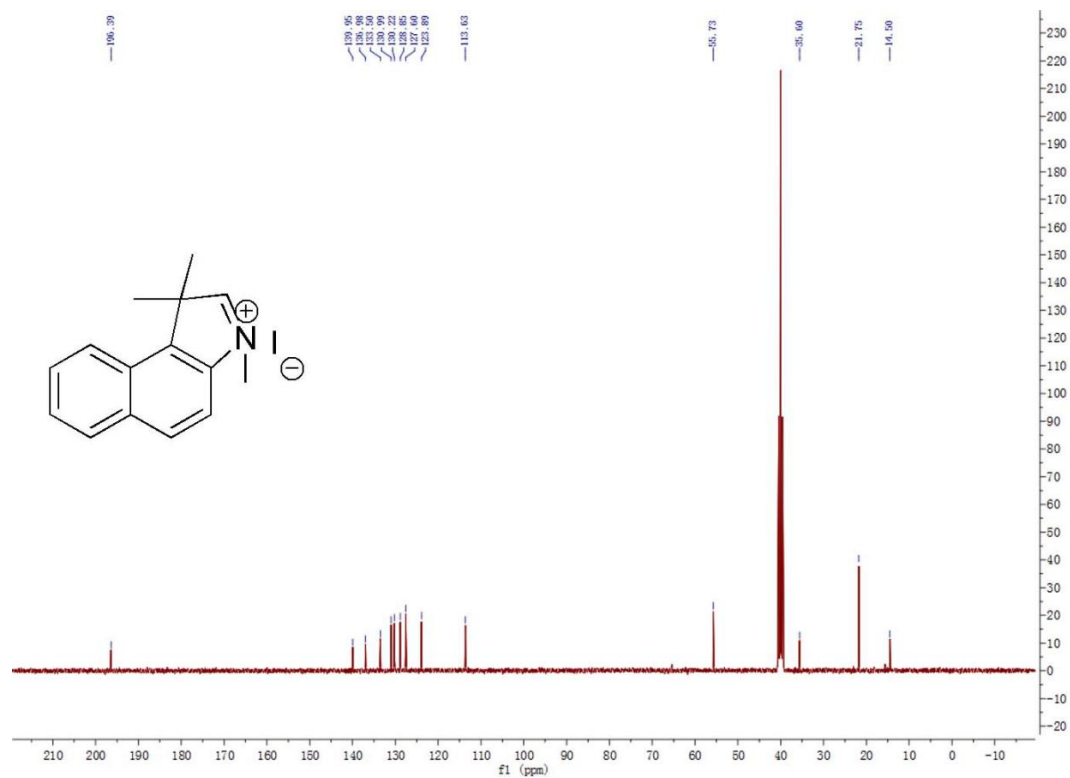


Fig. S13 ^{13}C NMR spectrum of compound 2.

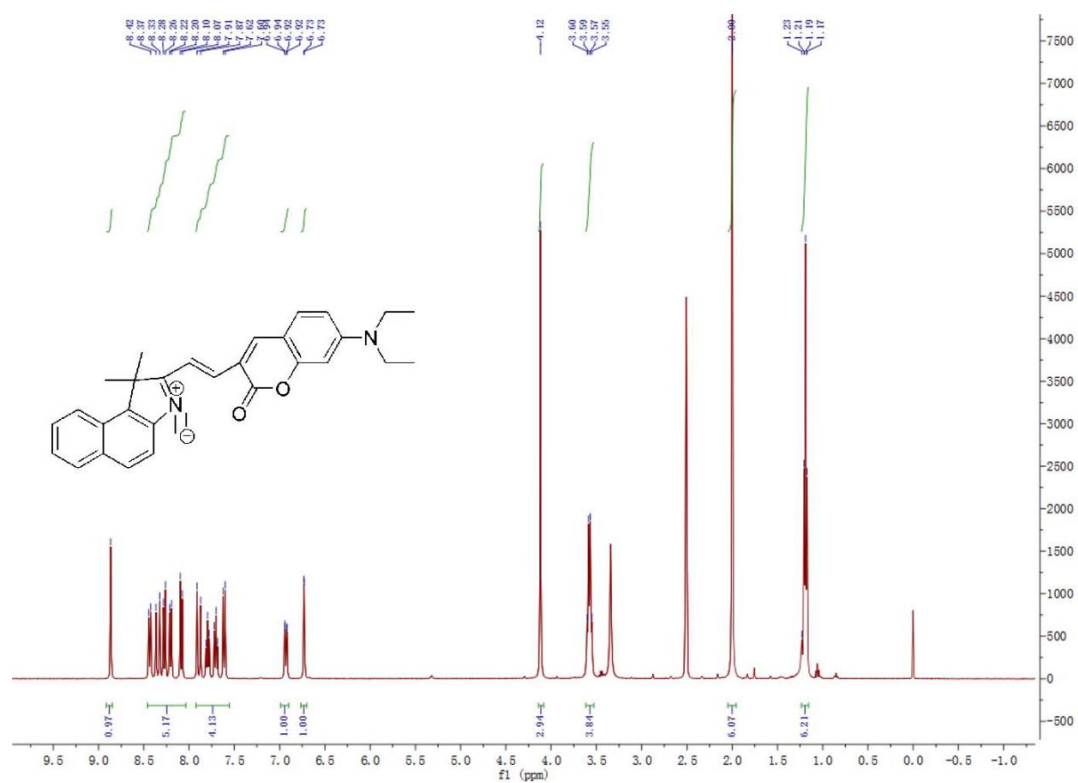


Fig. S14 ^1H NMR spectrum of compound 1.

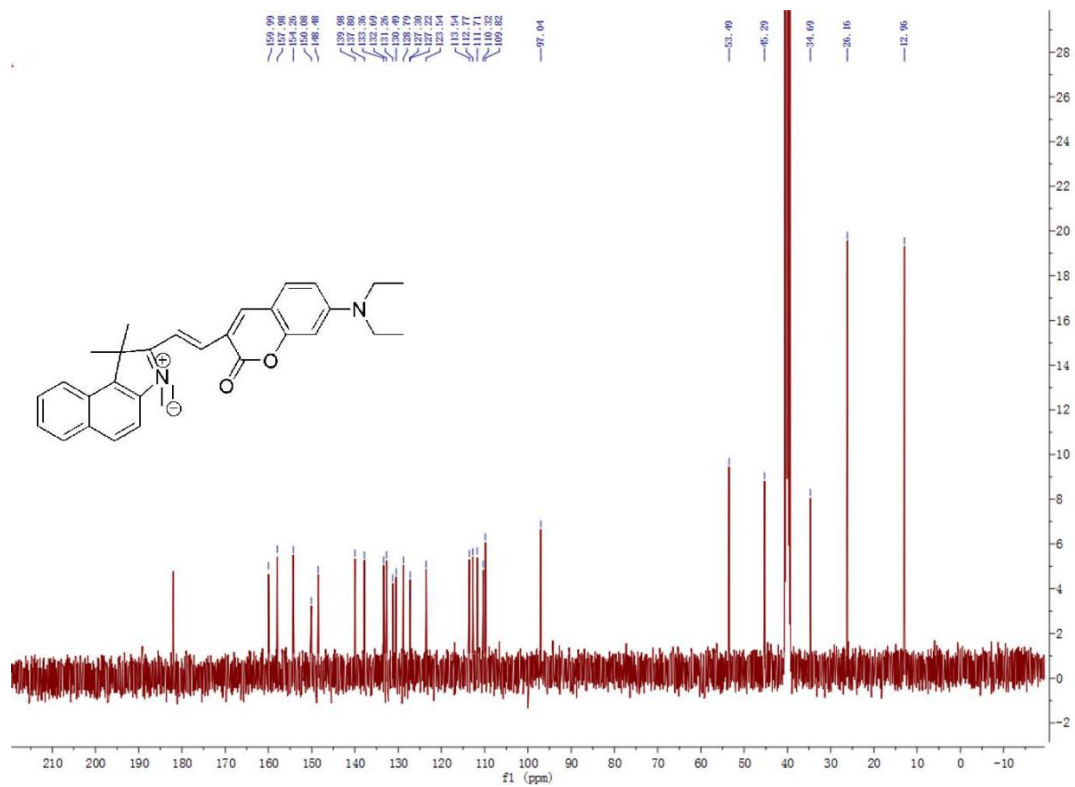


Fig. S15 ^{13}C NMR spectrum of compound 1.