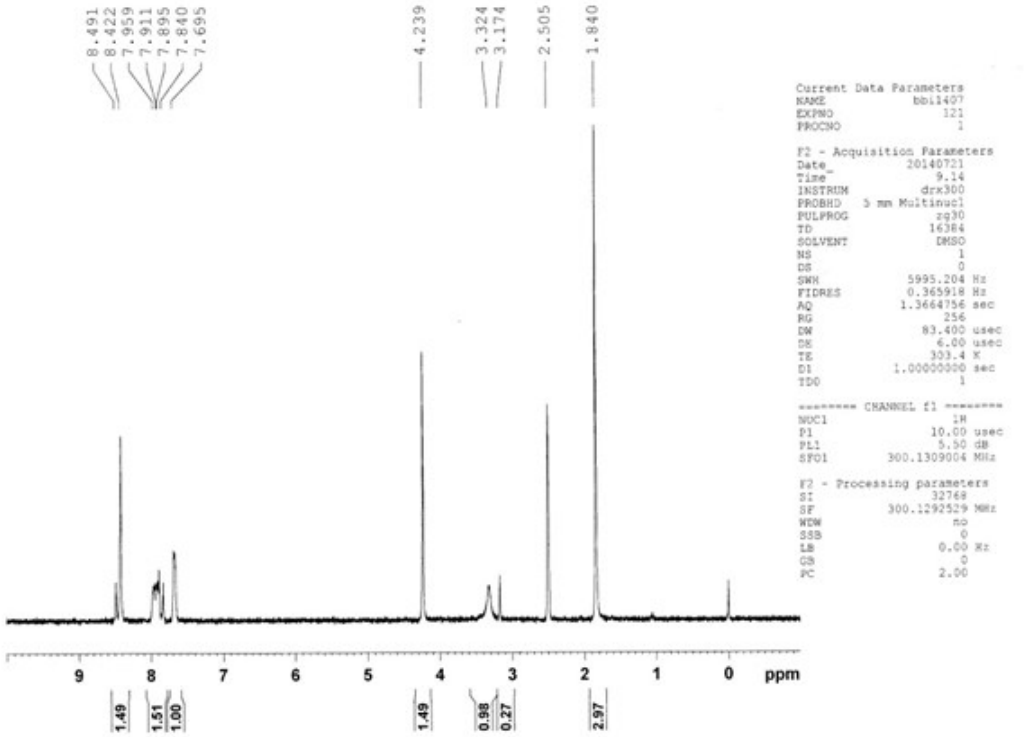
Electronic Supplementary Information

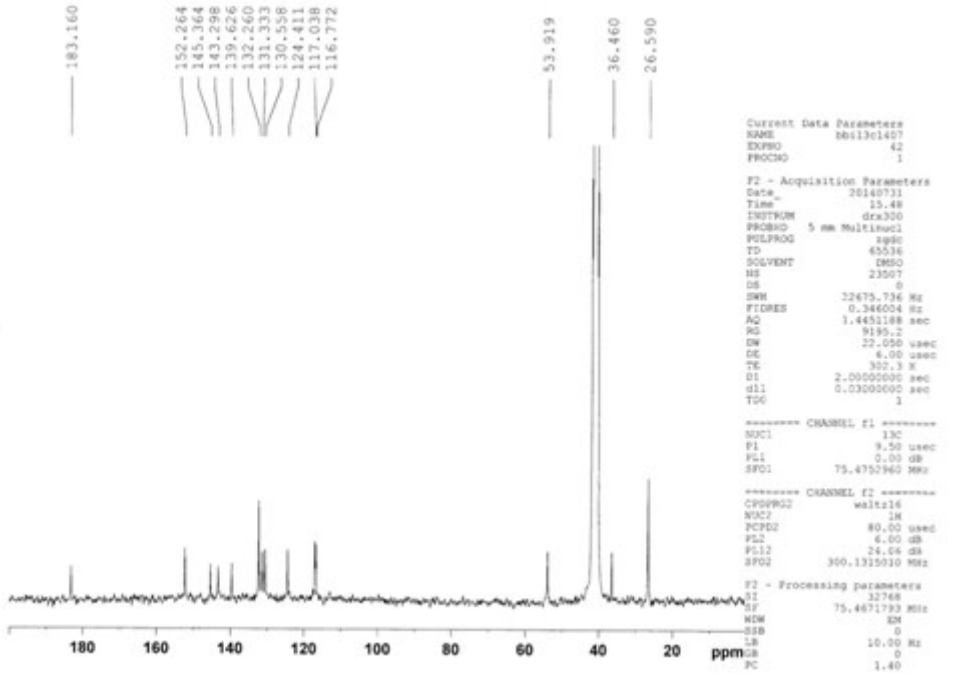
§ Tao Liu, [a] Fangjun Huo,*[b] Caixia Yin,*[a] § JianFang Li, [a] Lixi Niu [c]

[a]*Institute of Molecular Science, Shanxi University, Taiyuan, 030006, China.*
[b] *Research Institute of Applied Chemistry, Shanxi University, Taiyuan, 030006, China.*
[c] *Institute of Biotechnology, Shanxi University, Taiyuan 030006, PR China.*
E-mail: yincx@sxu.edu.cn; huofj@sxu.edu.cn

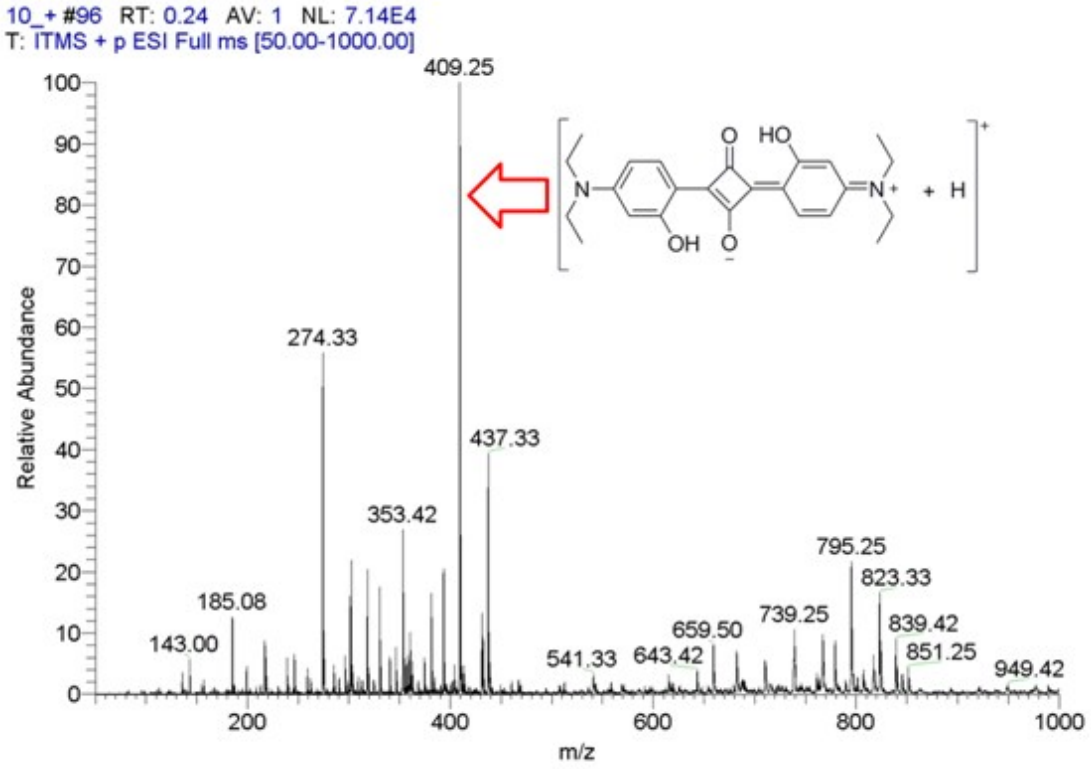
Figure S1: 1D ^{1}H NMR, ^{13}C NMR, ESI-MS, and crystal structure spectra of the probe.



The ^{1}H NMR (300MHz) spectra of the **probe** in DMSO



The ^{13}C NMR (75 MHz) spectra of the **probe** in DMSO



ESI-MS of the probe**:** HRMS (ESI-TOF) m/z: [probe + H]$^+$ Calcd for $C_{24}H_{28}N_2O_4$ 409.21, Found 409.25, the data was measured with GCT-MS (Waters) instrument.

Figure S2: The UV–vis and fluorescence titration spectra of Cys and GSH

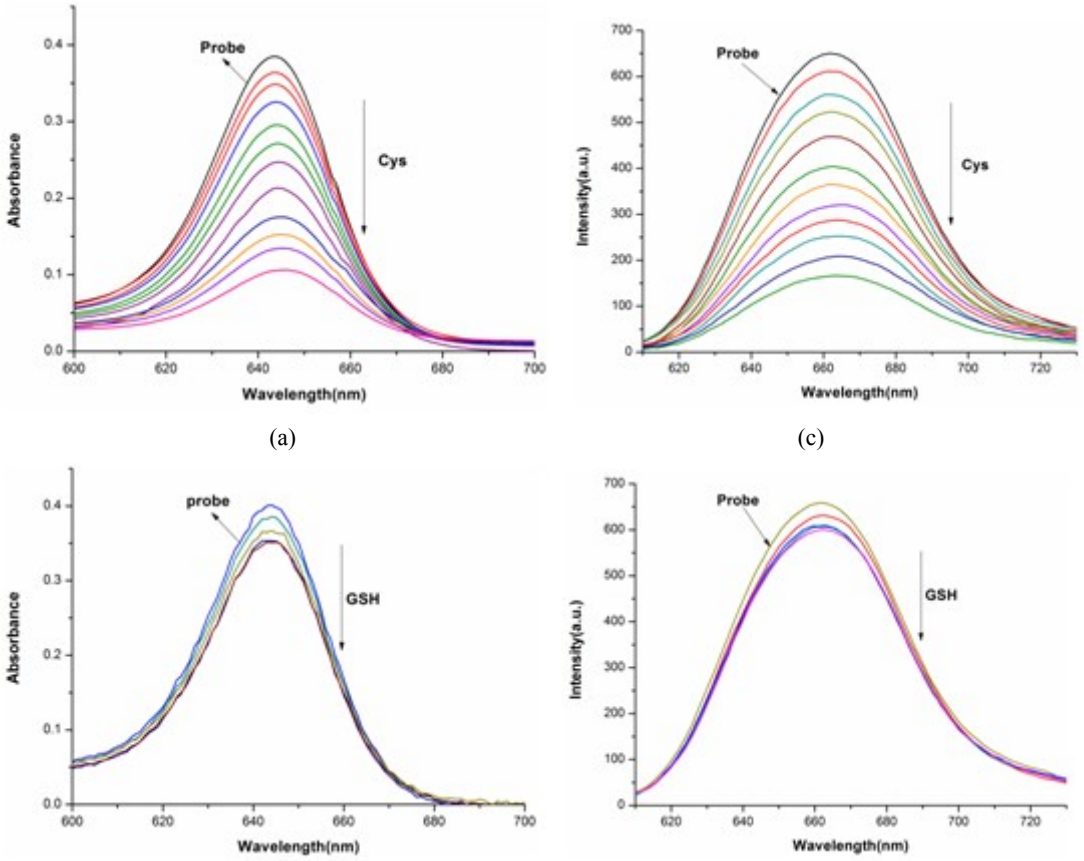
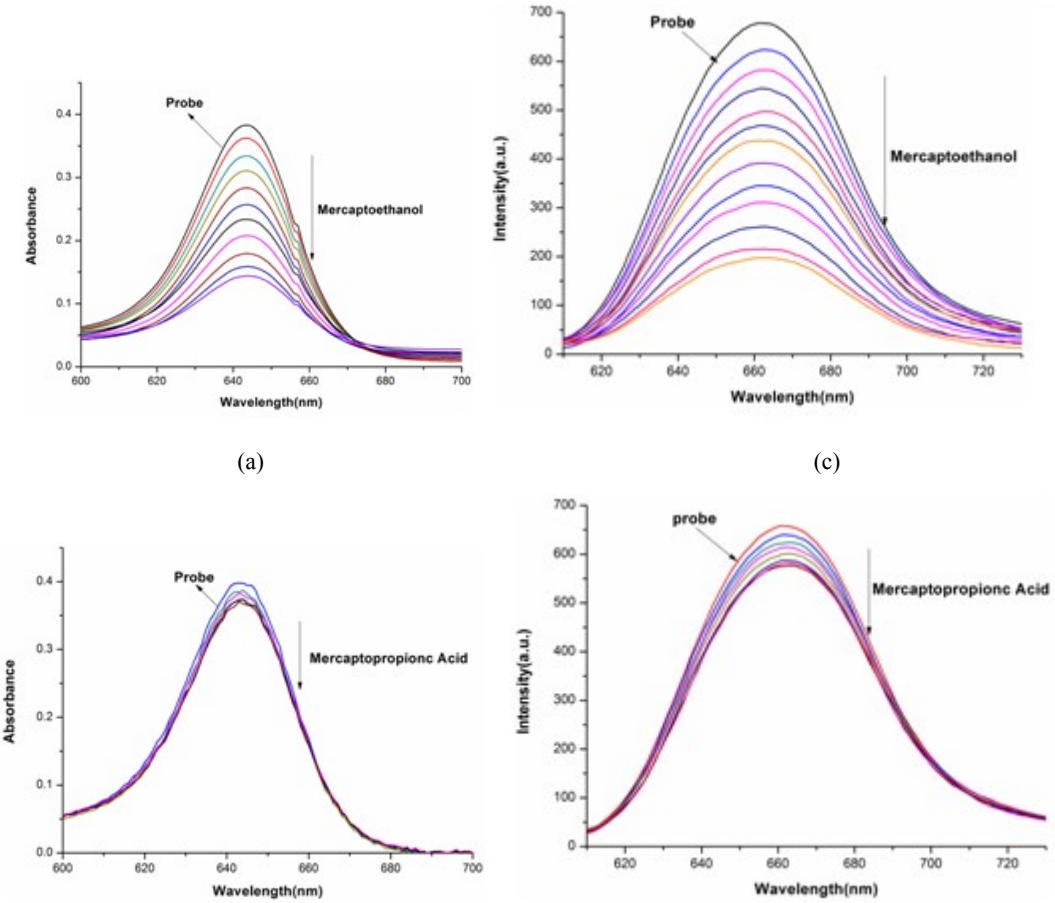


Figure S2: Left: UV–vis spectra of the probe (35 μM) with Cys (200μM)**(a)** and GSH (75 μM) **(b)** in CH_3CN–HEPES buffer (10 mM, pH 9.0, 1 : 1, v/v). Right: Fluorescence spectra of probe (5 μM) with Cys (200 μM) **(c)** and GSH (40 μM) **(d)** in CH_3CN–HEPES buffer (10 mM, pH 9.0, 1 : 1, v/v) (λ_{ex} = 575nm, slit: 5.0 nm/5.0 nm).

Figure S3: The UV–vis and fluorescence titration spectra of ME and MPA



(a) (c)

(b) (d)

Figure S3: Left: UV–vis spectra of the probe (35 μM) with ME(2-Mercaptoethanol)(80 μM) **(a)** and MPA (Mercaptopropionc Acid) (80 μM) **(b)** in CH_3CN–HEPES buffer (10 mM, pH 9.0, 1 : 1, v/v). Right: Fluorescence spectra of probe (5 μM) with ME (50 μM) **(c)** and MPA (50 μM) **(d)** in CH_3CN–HEPES buffer (10 mM, pH 9.0, 1 : 1, v/v) (λ_{ex} = 575 nm, slit: 5.0 nm/5.0 nm)

Figure S4: The UV–vis and fluorescence titration spectra of probe when all kinds of analytes added

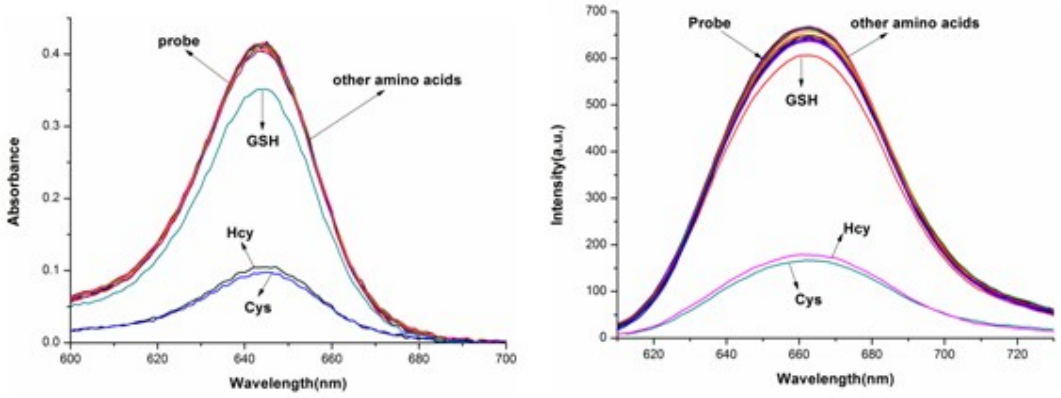


Figure S4: The selectivity of probe 1 for (Ala, Arg, Asp, Gln, Glu, Gly, His, IIe, Leu, Lys, Met, Phe, Pro, Ser, Thr, Tyr, Trp and Val).

Figure S5: The detection limits of Cys

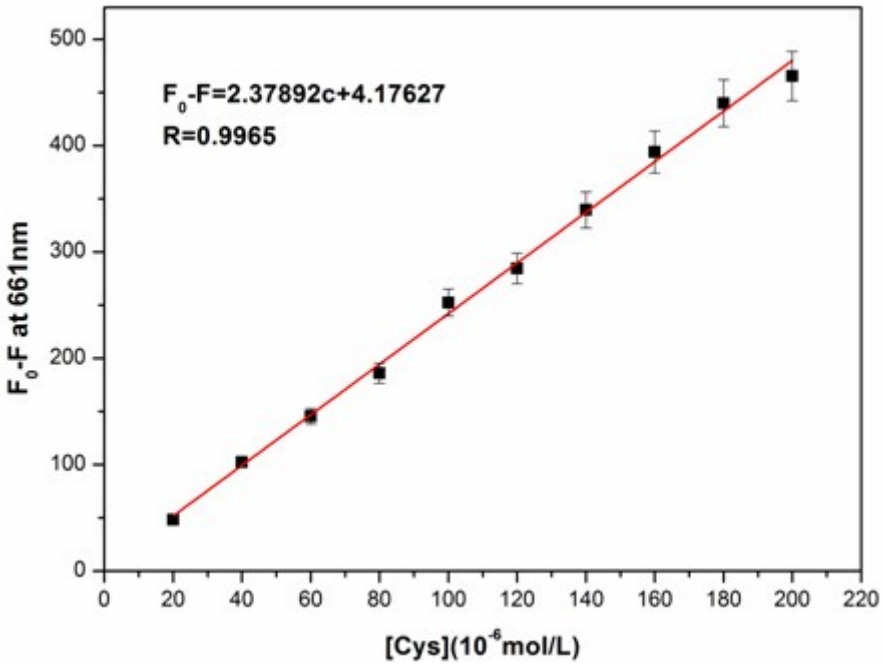
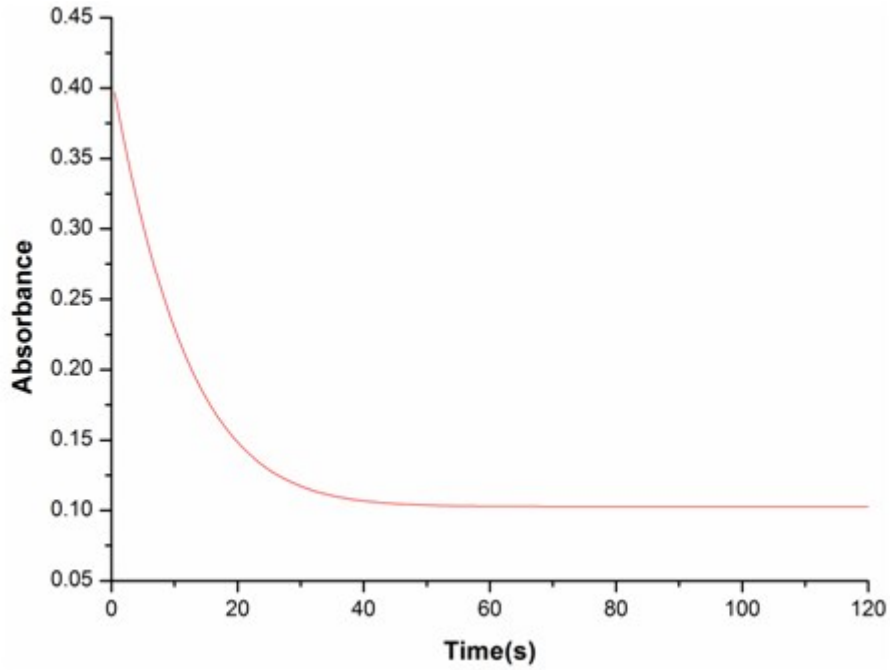
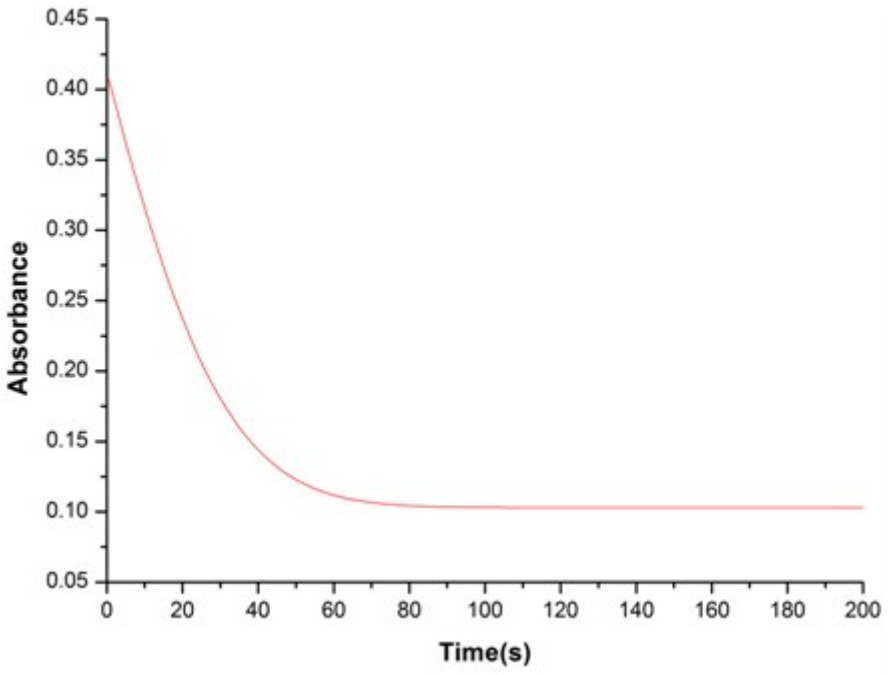


Figure S6: Kinetic study of the response of the probe to Hcy and Cys at 25 ℃



(a)



(b)

Figure S6: Time-dependent absorbance of probe at 645 nm in the presence of 10 equiv. Hcy (a) and Cys (b).

Figure S7: Choice of pH range for the measurements

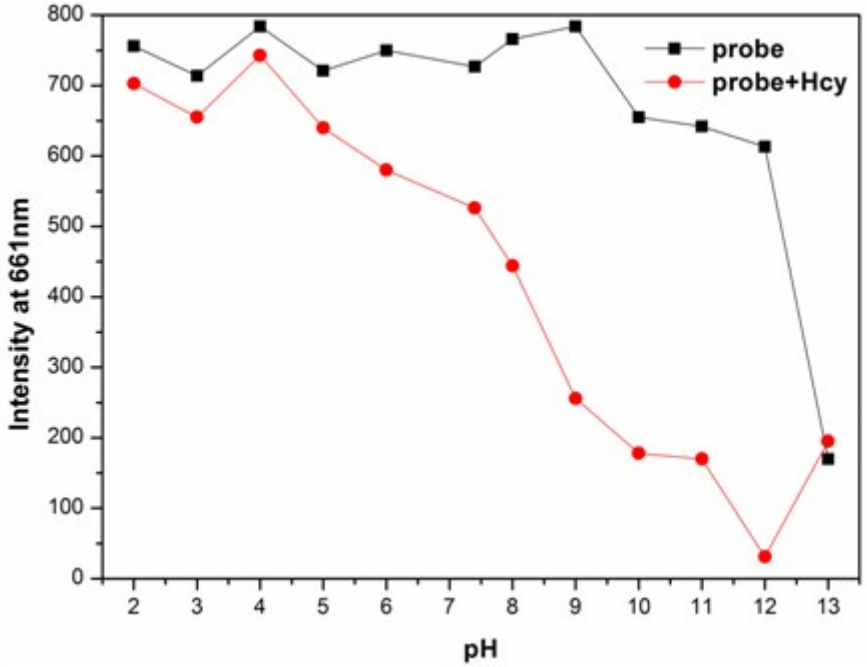
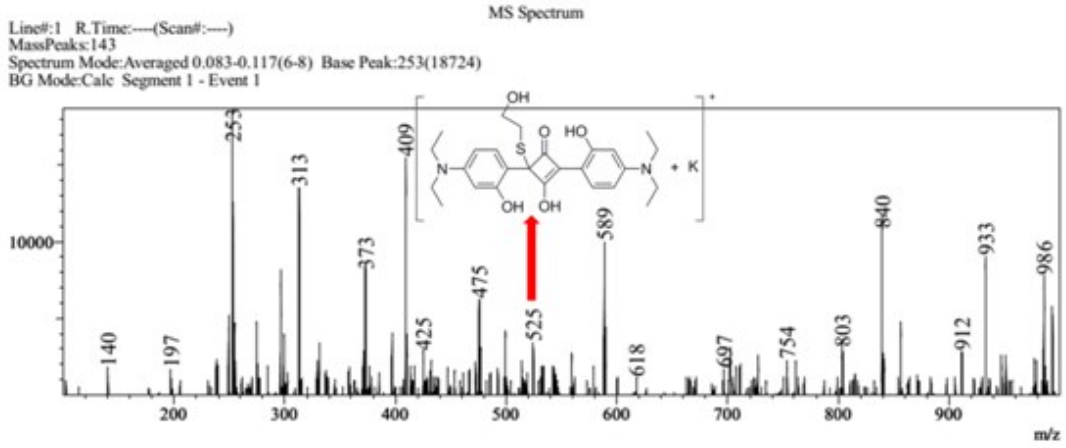


Figure S7: The fluorescence intensity of probe at 661 nm in the absence and presence of Hcy under different pH (5 μmol/L probe in CH_3CN–HEPES buffer (10 mM, pH 9.0, 1 : 1, v/v)(λ_{ex} = 575 nm; Slit: 5nm/5 nm).

Figure S8: ESI-MS spectra of the probe-ME adduct



ESI-MS of the probe**:** m/z: $[probe + ME + K]^+$ Calcd for $C_{26}H_{34}KN_2O_5S$ 525.18, Found 525. The data was measured with LCMS-8030 (Shimadzu) instrument.