# Electronic Supplementary Information

# A long wavelength fluorescent probe for biothiols and its application in cell imaging

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**Figure S1**: $^{1}H$ NMR, $^{13}C$ NMR, and ESI-MS of the probe **1**.

**Figure S2**: The photostabilities of probe **1** and probe **1**-Cys.

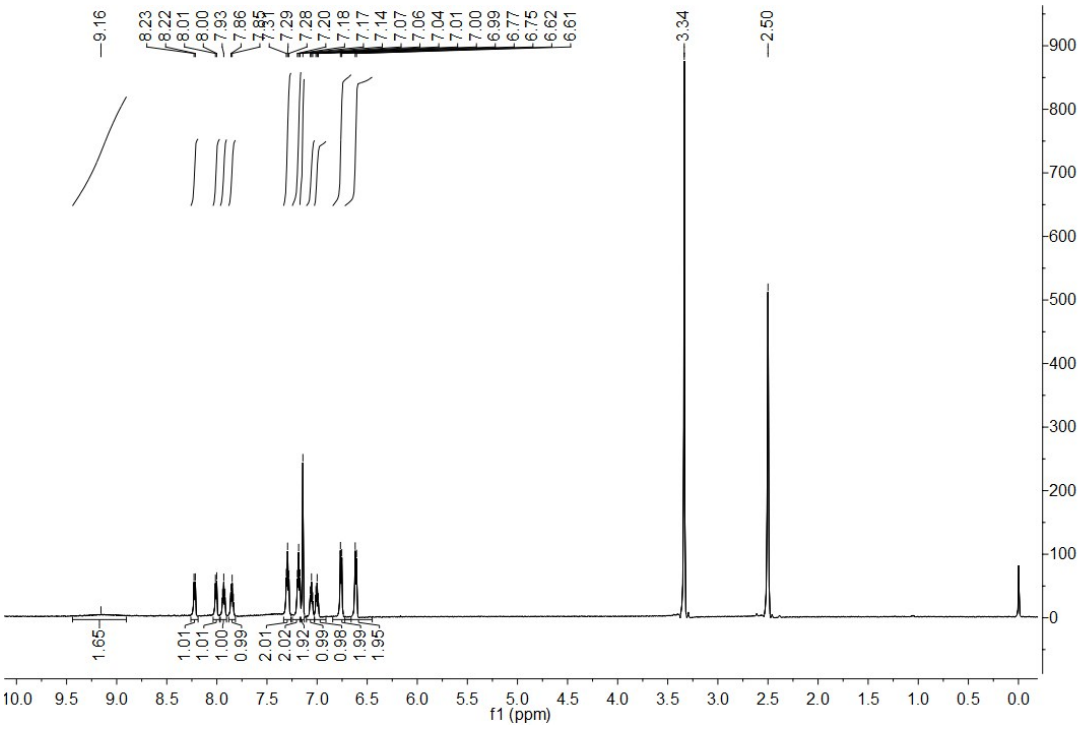
**Figure S3**: Kinetic study of the response of probe **1** to Hcy and GSH at 25 ℃.

**Figure S4:** The detection limits of Cys, Hcy and GSH.

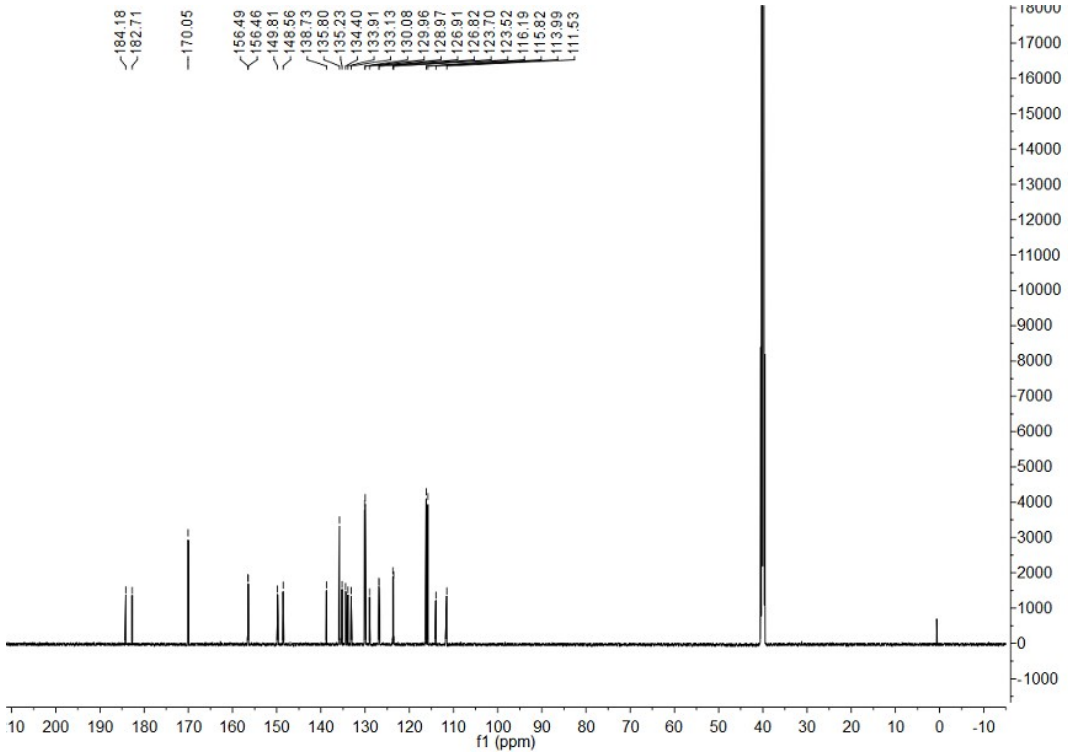
**Figure S5**: The ESI-MS of product obtained by reaction between probe **1** and ME.

**Figure S6**: NMR spectra of the probe **1**-ME.

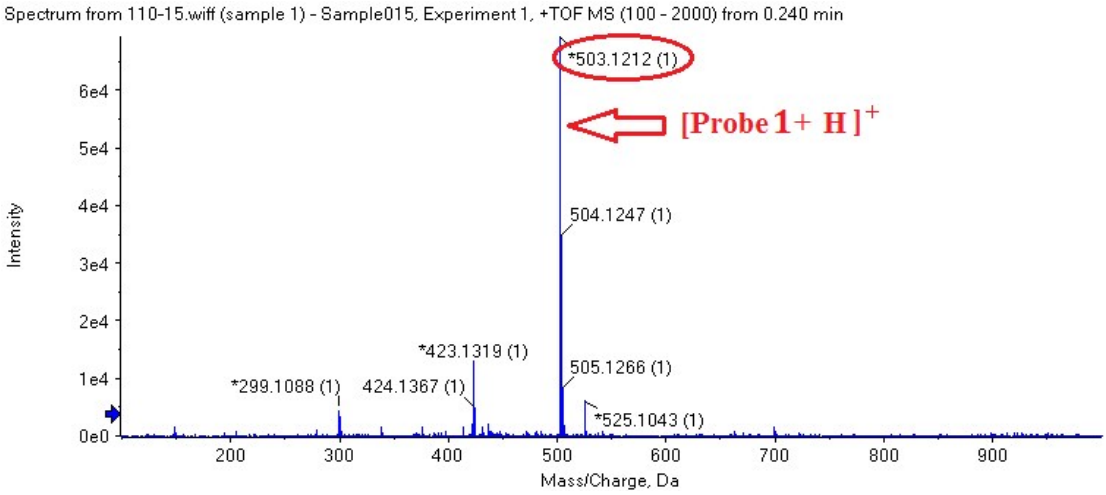
**Figure S1**: $^{1}$H NMR, $^{13}$C NMR, and ESI-MS of the probe **1**.




The $^{1}$H NMR (600MHz) spectra of the probe **1** in DMSO-$d_6$.




The $^{13}$C NMR (150 MHz) spectra of the probe **1** in DMSO-$d_6$




ESI-MS of the probe **1** (ESI+TOF) m/z: [Probe **1** + H]$^+$ Calcd for $C_{30}H_{19}N_2O_6^+$ 503.1238, Found 503.1212.

**Figure S2:** The photostabilities of probe **1** and probe **1**-Cys.

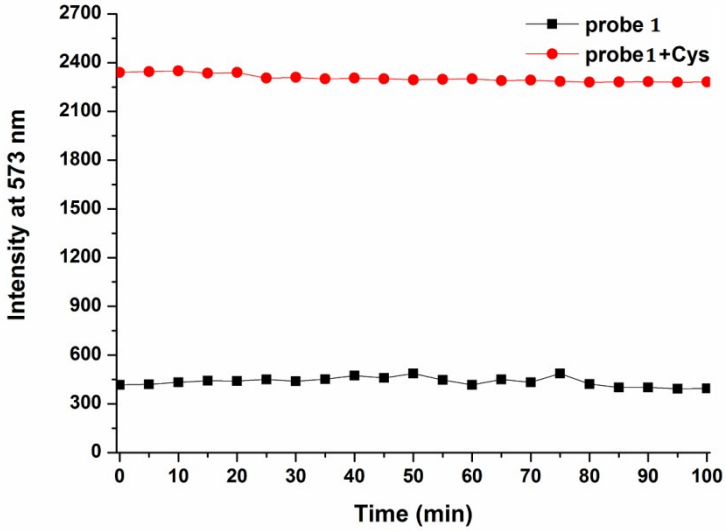
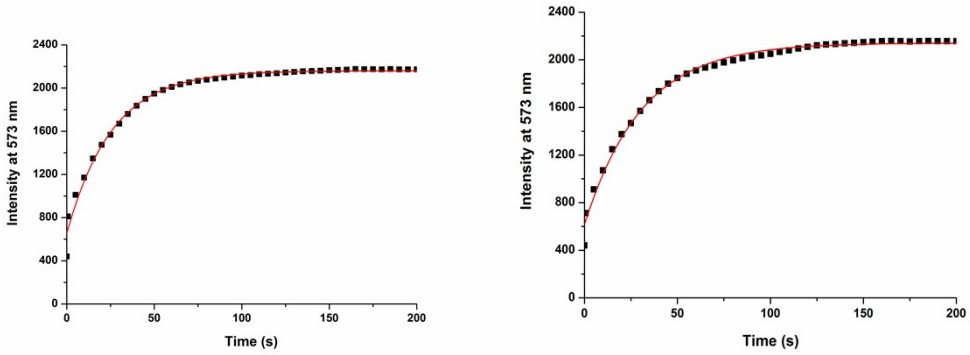



**Fig. S2:** The fluorescence intensity at 573 nm of fluorescent probe **1** (10 μM) at 573 nm in the absence and presence of Cys (10 μM) in DMSO: HEPES=1:1(V/V, pH 7.4). Sample was exposed under respective optimal excitation wavelength and fluorescence intensities were measured at 5 min intervals ($\lambda_{ex}$ = 455 nm; slit: 10 nm/10 nm).

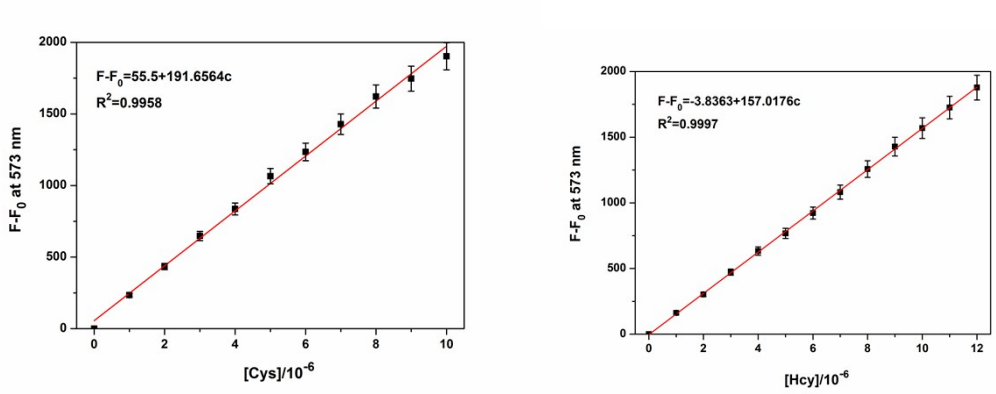
**Figure S3:** Kinetic study of the response of the probe **1** to Hcy and GSH at 25 ℃



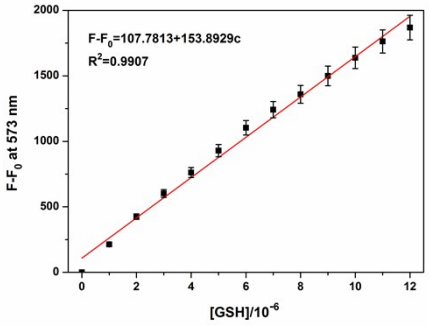

(a) (b)

**Fig. S3:** Kinetic study of the response of the probe **1** (10 μM) to 20 equiv. (a) Hcy and (b) GSH.

**Figure S4:** The detection limits of Cys, Hcy and GSH.



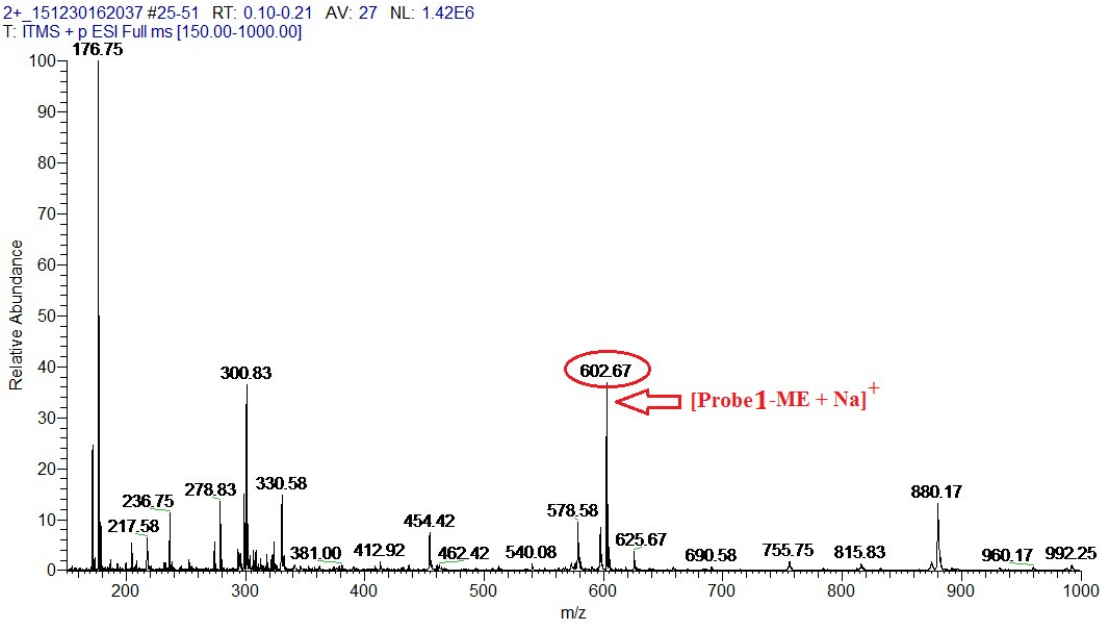

(a) (b)




(c)

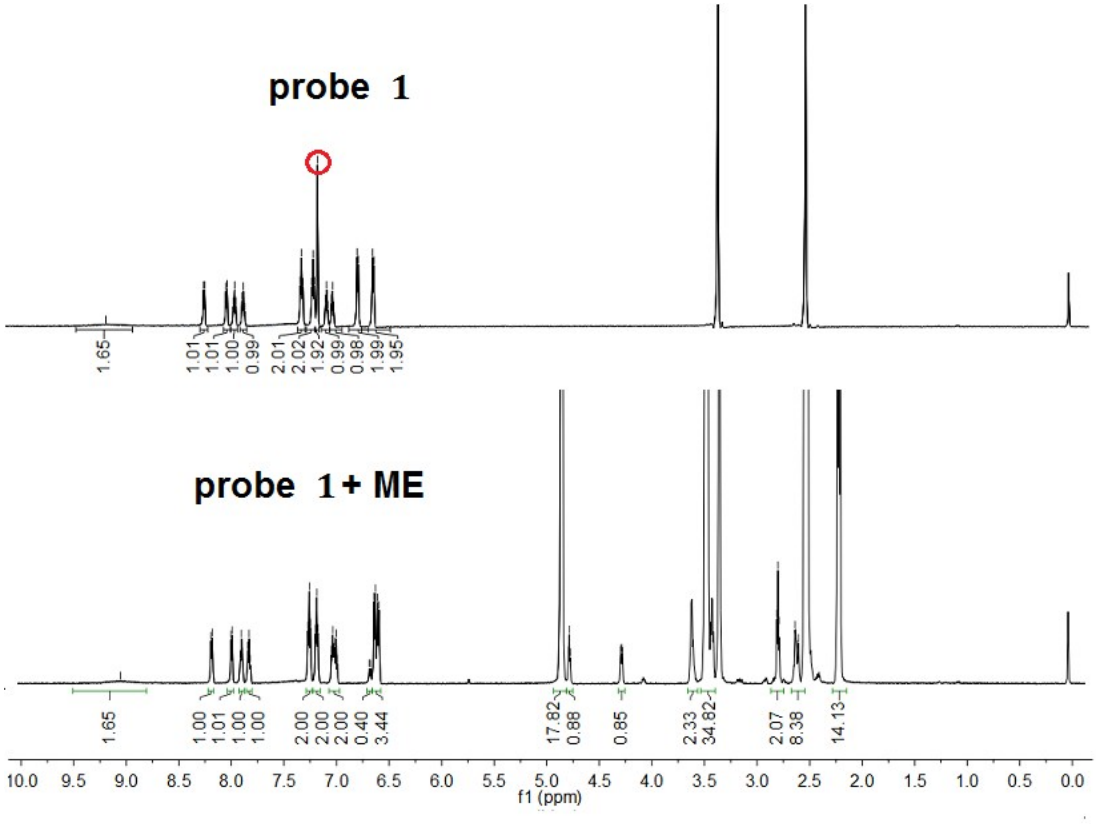
**Fig. S4:** Plot of the fluorescence intensity at 573 nm as a function of the concentrations of (a) Cys, (b) Hcy and (c) GSH.

**Figure S5:** The ESI-MS of product obtained by reaction between probe **1** and ME.

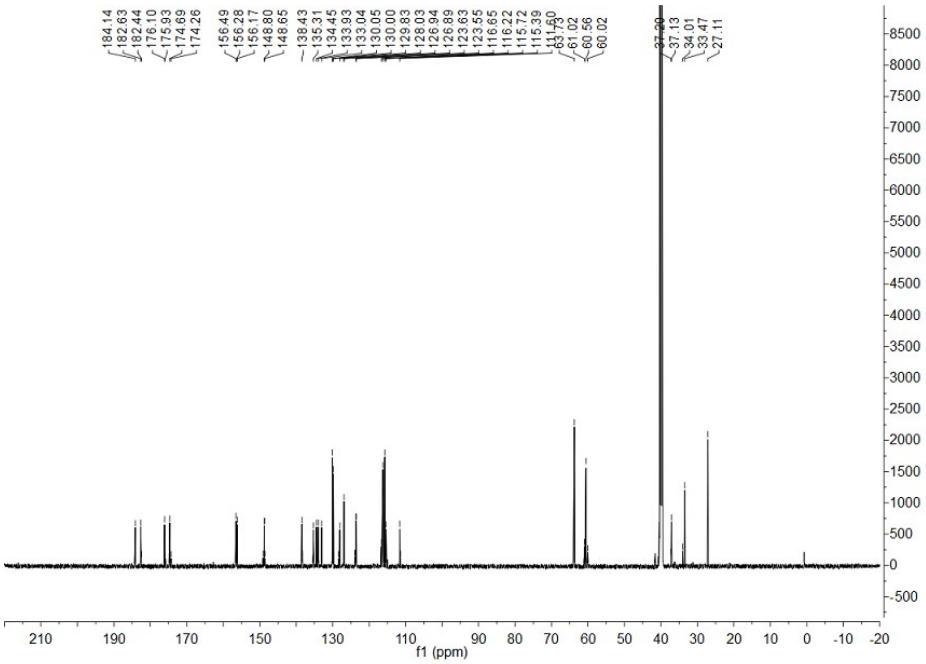



ESI-MS of the probe **1** (ESI+TOF) m/z: [probe **1**-ME + Na]$^+$ Calcd for $C_{32}H_{24}N_2NaO_7S^+$ 603.12, Found 602.67.

**Figure S6:** NMR spectra of the probe **1**-ME.




(a)




(b)

**Fig. S6:** (a) $^{1}$H NMR (600 MHz) spectra of probe **1** and probe **1**-ME in DMSO-$d_6$. (b) $^{13}$C NMR (150 MHz) spectra of probe **1**-ME in DMSO-$d_6$.