Electronic Supplementary Material (ESI) for Analytical Methods.

Supporting Information

Fluorescence turn-on detection of cysteine over homocysteine and glutathione based on "ESIPT and AIE"

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Contents:

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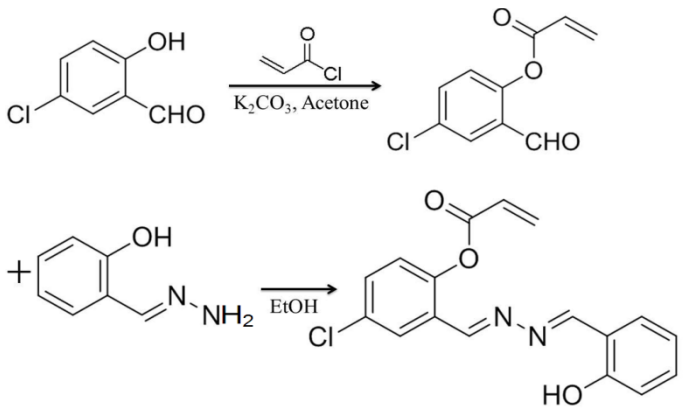
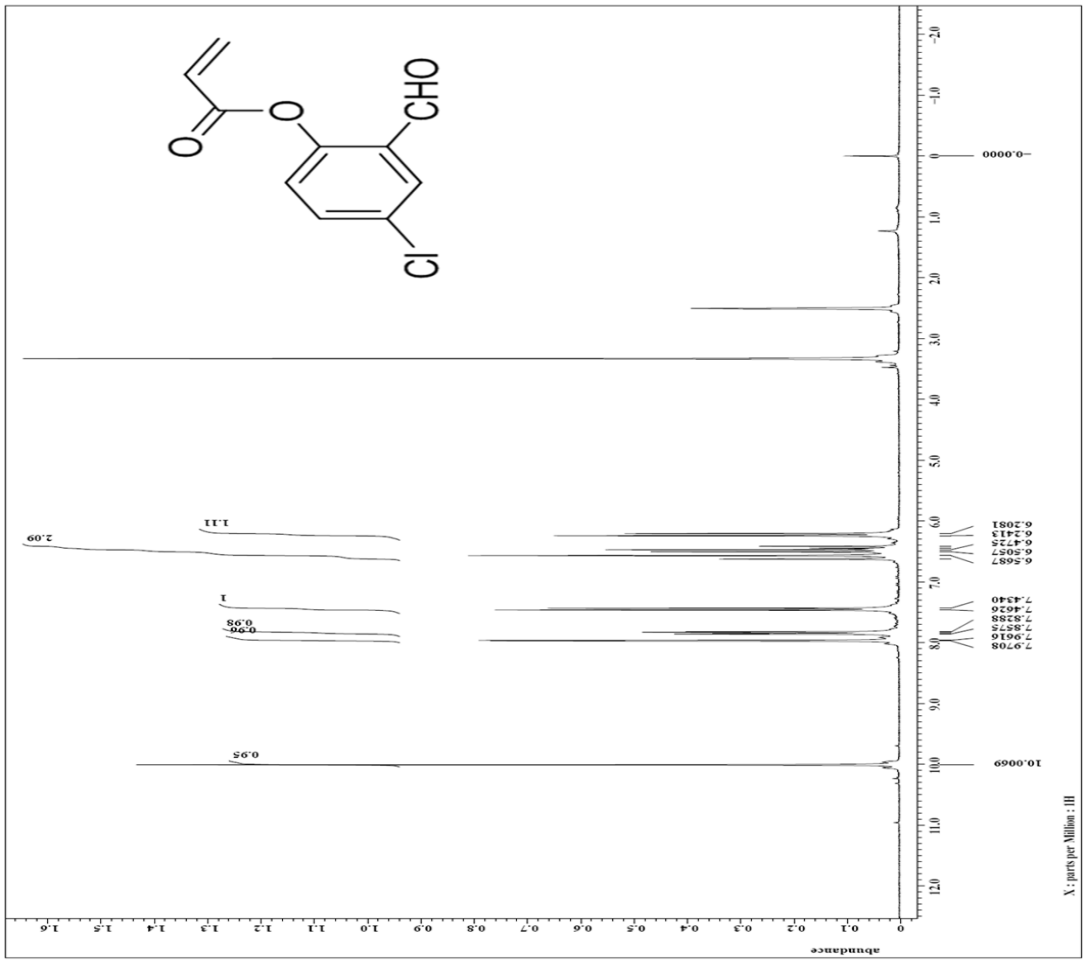
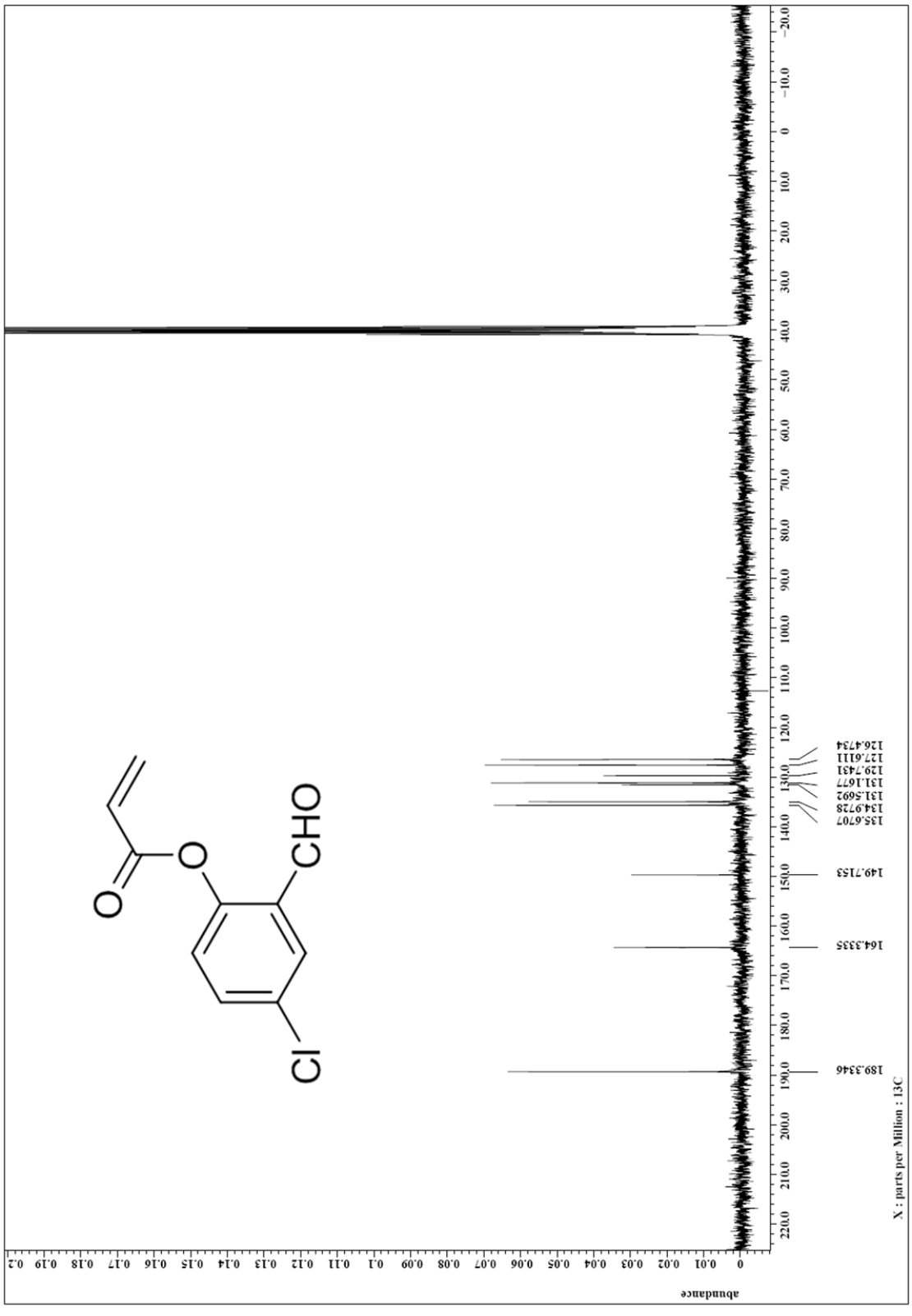
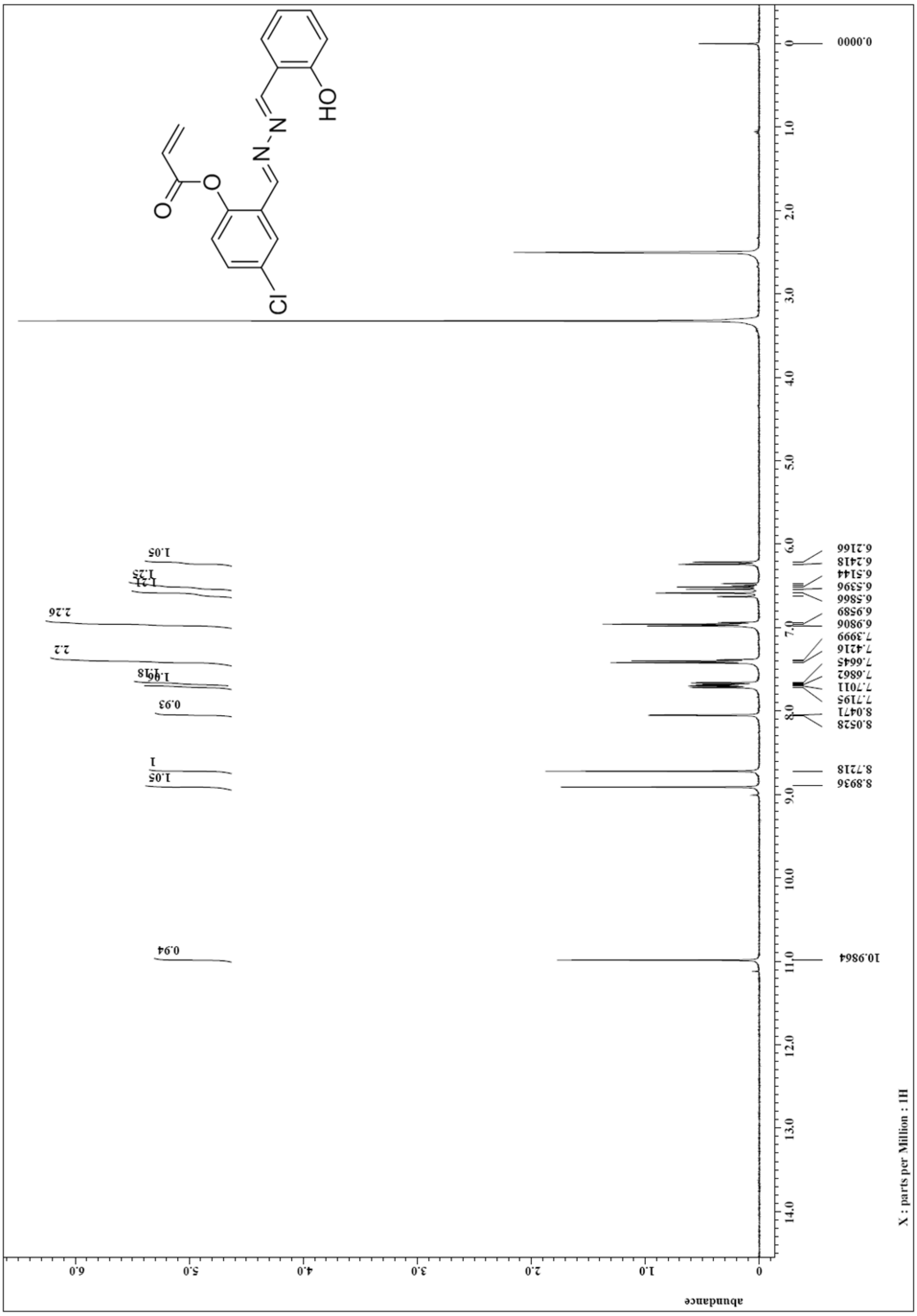


Scheme. S1

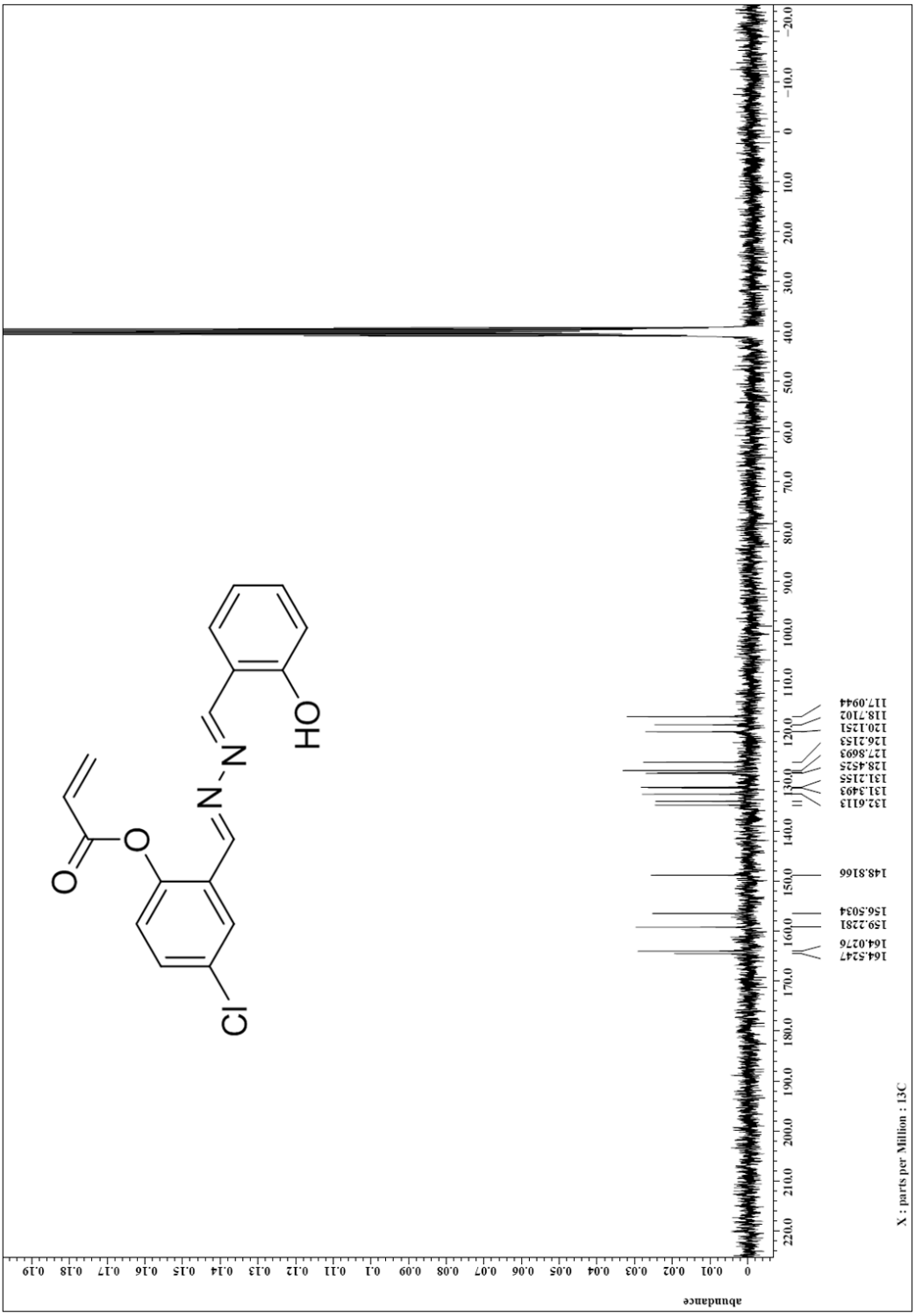
^{1}H- and ^{13}C-NMR Spectra of compound 4-chloro-2-formylphenyl acrylate, 2 and 1




O
O
CHO
Cl
189.3346
164.3335
149.7153
135.6707
134.9728
131.5692
131.1677
129.7431
127.6111
126.4734
X : parts per Million : 13C
abundance



0.0000
6.2166
6.2418
6.5144
6.5396
6.5866
6.9589
6.9806
7.3999
7.4216
7.6645
7.6862
7.7011
7.7195
8.0471
8.0528
8.7218
8.8936
10.9864
X : parts per Million : 1H
abundance


HO
N
N
O
O
Cl
X : parts per Million : 13C
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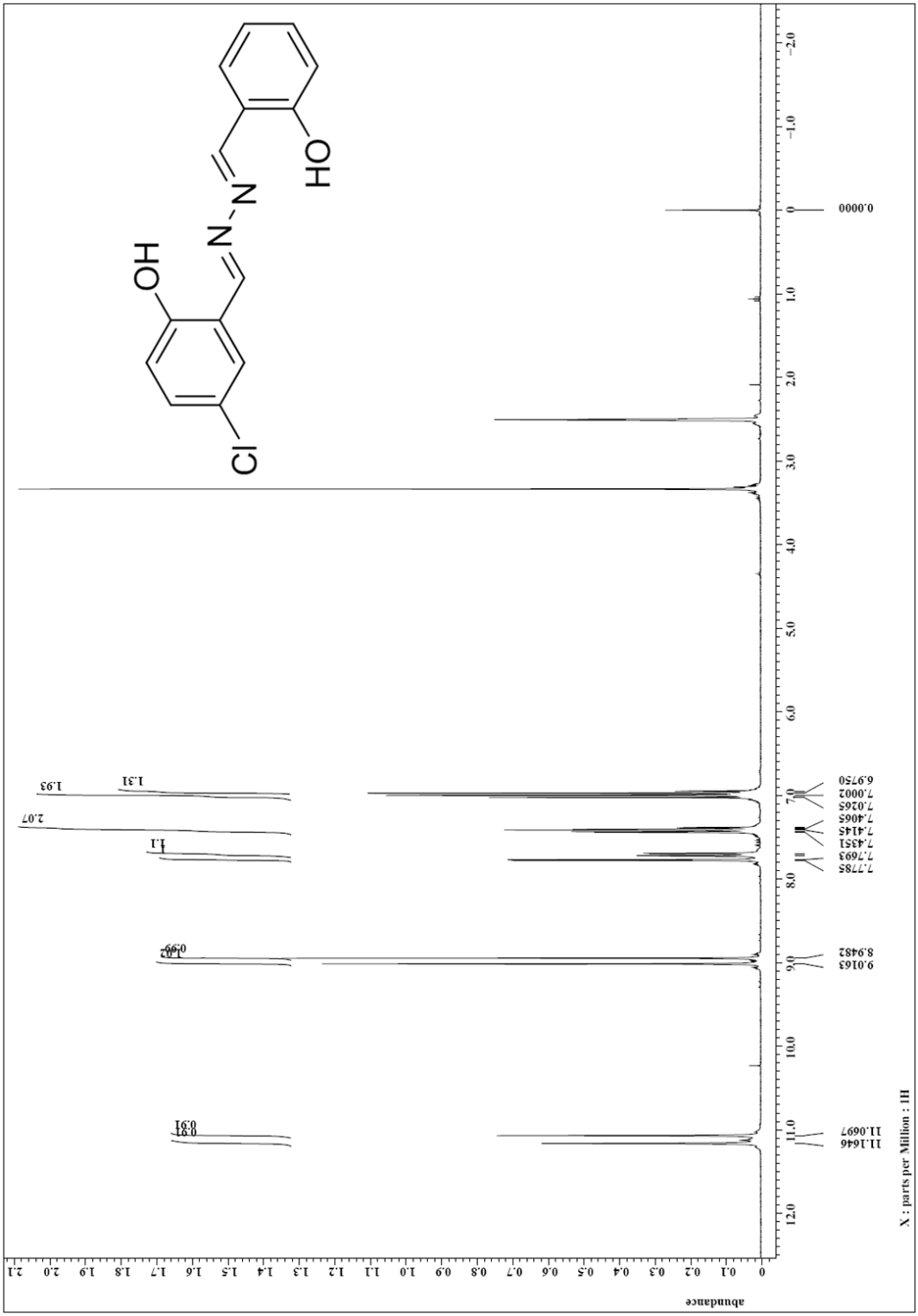
164.0276
159.2281
156.5034
148.8166
132.6113
131.3493
131.2155
128.4525
127.8693
126.2153
120.1251
118.7102
117.0944
abundance


OH
N
N
HO
Cl
abundance
X : parts per Million : 1H
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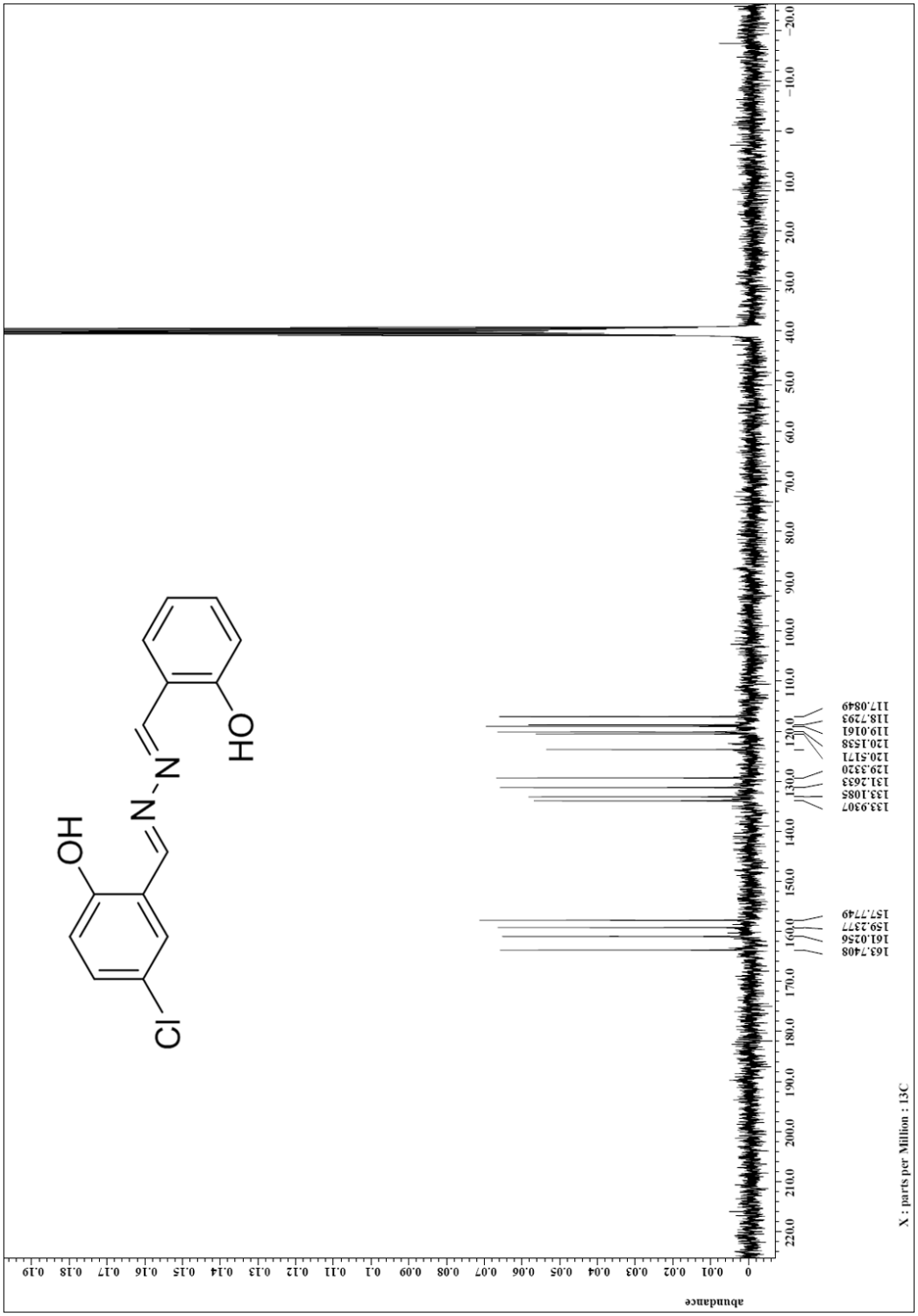
11.0697
9.0163
8.9482
7.7785
7.7693
7.4351
7.4145
7.4065
7.0265
7.0002
6.9750
0.0000
0.91
0.91
1.02
0.99
1.1
2.07
1.31
1.93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N
N
OH
Cl
163.7408
161.0256
159.2377
157.7749
133.9307
133.1085
131.2633
129.3320
120.5171
120.1538
119.0161
118.7293
117.0849
X : parts per Million : 13C
abundance

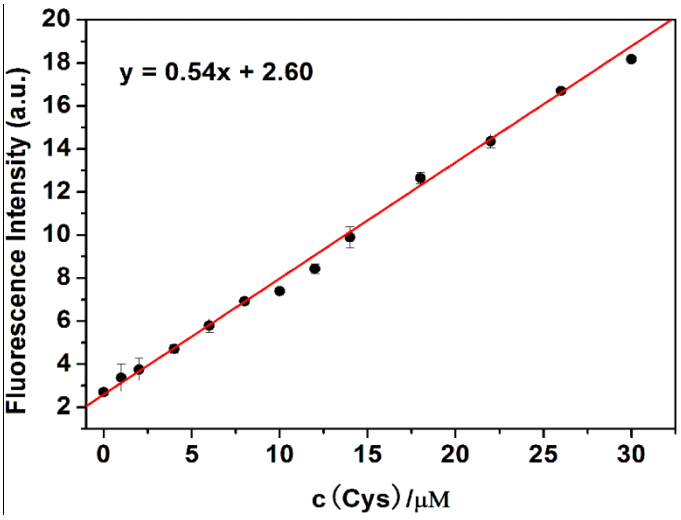

Fig. S1 The fluorescence intensity of **2** (30 μM) as a function of Cys concentration, in PBS buffer (10 mM, pH = 7.4, 30% DMSO), λ_{ex} = 400 nm, λ_{em} = 558 nm.

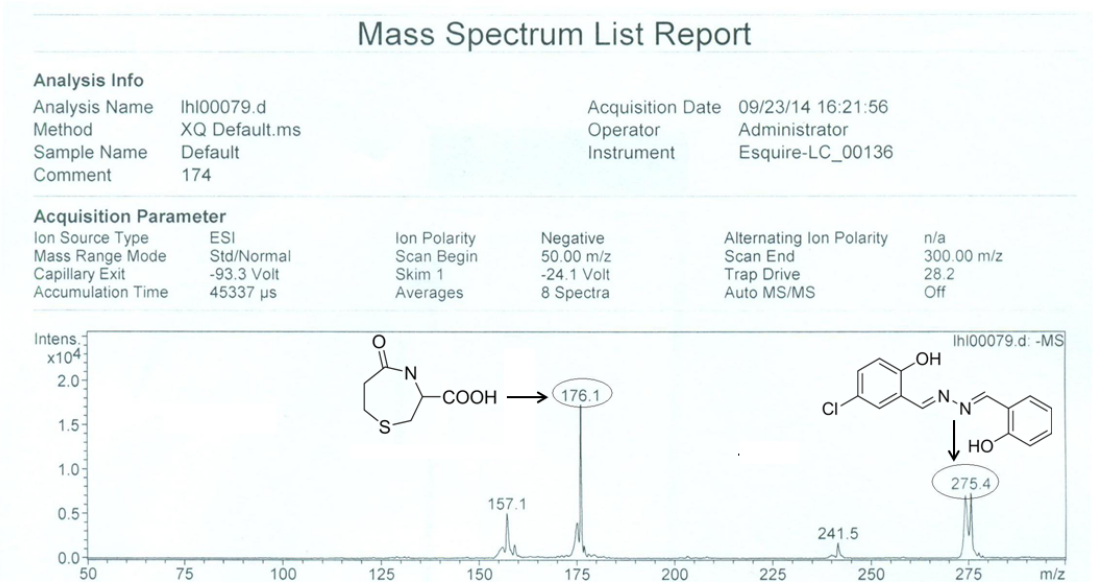

Fig. S2 Mass spectral in DMSO after probe **2** reacted with Cys (1 equiv.).

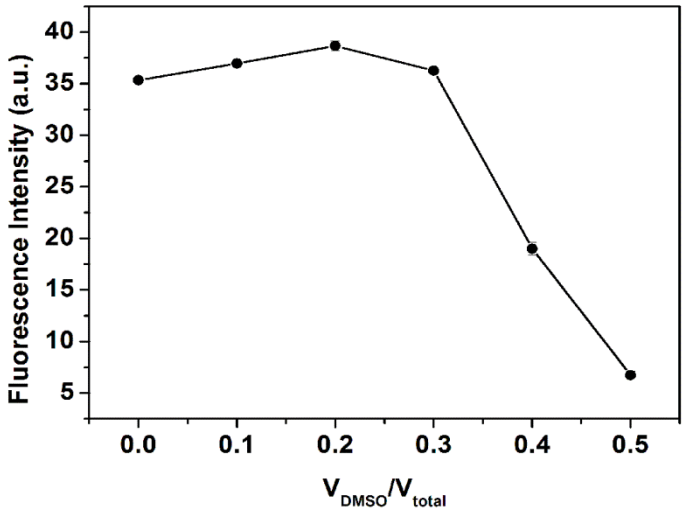

Fig. S3 Fluorescence intensity of **1** (30 μM) at 558 nm in PBS buffer (10 mM, pH = 7.4) with different DMSO volume fraction, λ_{ex} = 400 nm, λ_{em} = 558 nm.

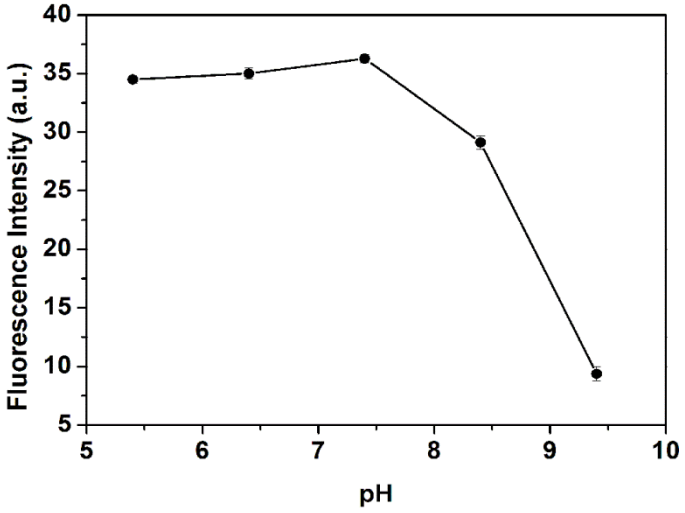

Fig.S4 Fluorescence intensity of **1** (30 μM) at 558 nm in PBS buffer (10 mM, 30% DMSO) with different pH, λ_{ex} = 400 nm, λ_{em} = 558 nm.

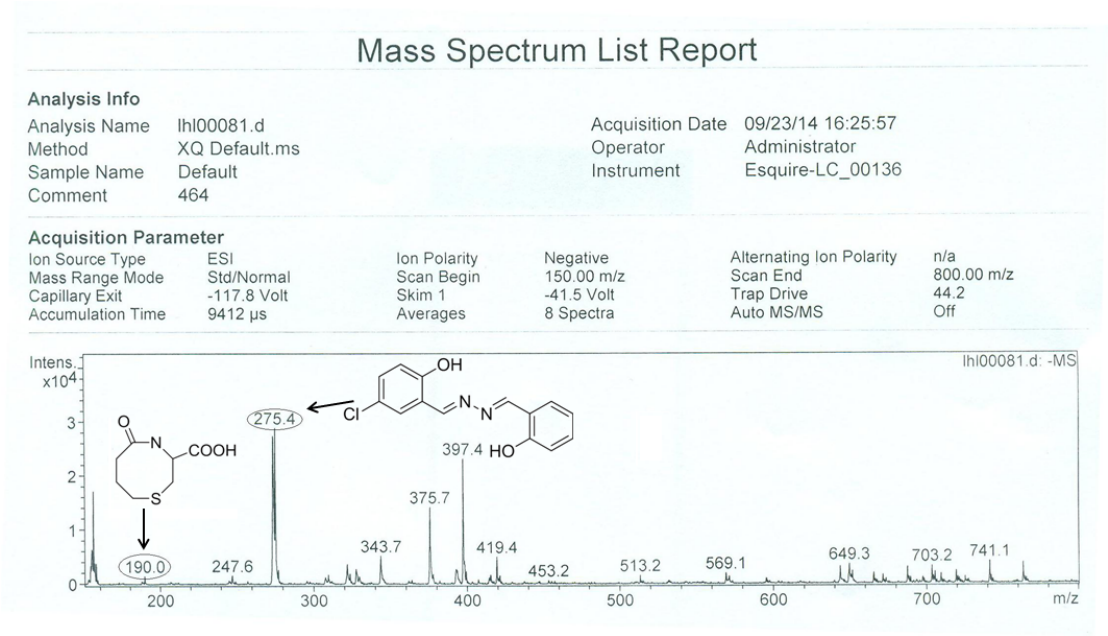

Fig. S5 Mass spectral in DMSO after probe **2** reacted with Hcy (1 equiv.).

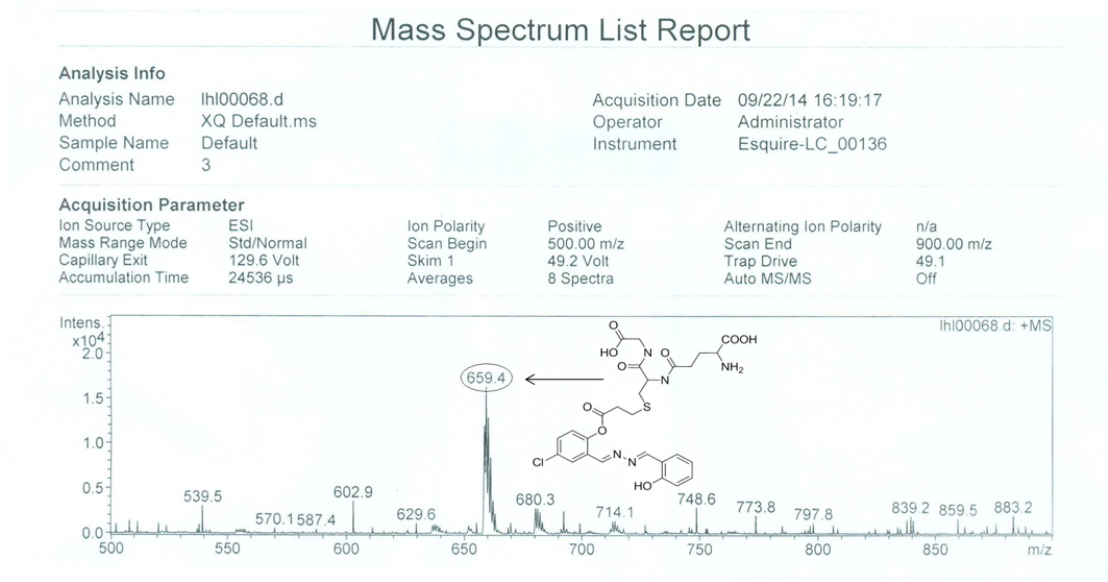

Fig. S6 Mass spectral in DMSO after probe **2** reacted with GSH (1 equiv.).

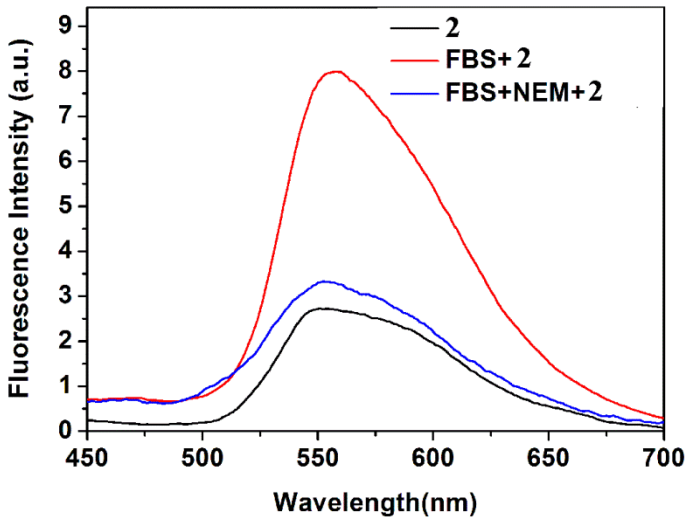

Fig. S7 Fluorescence response of **2** (30 μM) to FBS with or without pretreatment by thiol-blocking reagent, NEM (500 μM) in PBS buffer (10 mM, pH = 7.4, 30% DMSO), λ_{ex} = 400 nm.