

Electronic Supplementary Material (ESI) for New Journal of Chemistry

**A gold nanoclusters-based ratiometric fluorescence probe
for cysteine and homocysteine detection in living cells**

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Table of Contents:

- 1. The fluorescence response of AuNCs and NBD-SAr to Cys and Hcy**
- 2. TEM images of AuNCs and AuNCs incubated with Cys and Hcy**
- 3. The absorption spectra of NBD-SAr response to Cys and Hcy**
- 4. NMR and ESI-MS spectra**

1. The fluorescence response of AuNCs and NBD-SAr to Cys and Hcy

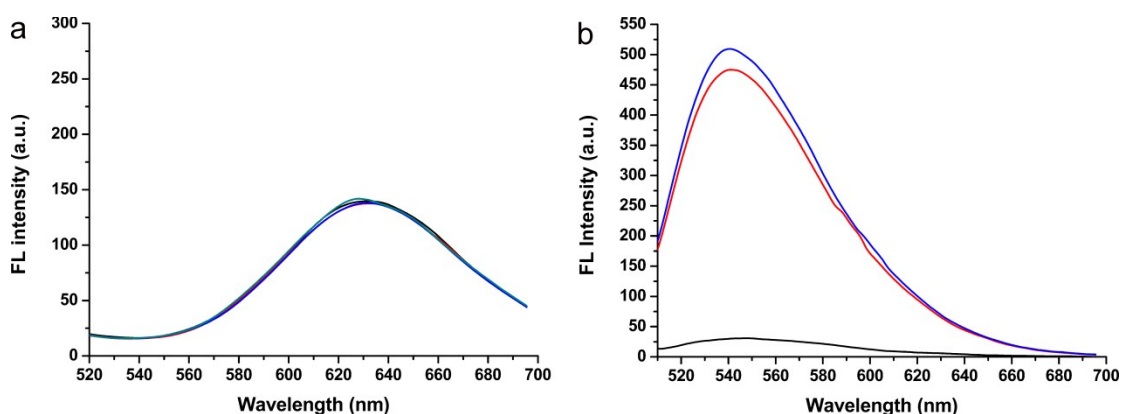


Fig. S1 (a) The fluorescence spectra of AuNCs ($40 \mu\text{g Au mL}^{-1}$) in the presence of Cys and Hcy (1 mM); (b) The fluorescence spectra of NBD-SAr organic molecular (10 μM , black line) and its response to Cys (100 μM , blue line) and Hcy (100 μM , red line).

2. TEM images of AuNCs and AuNCs incubated with Cys and Hcy

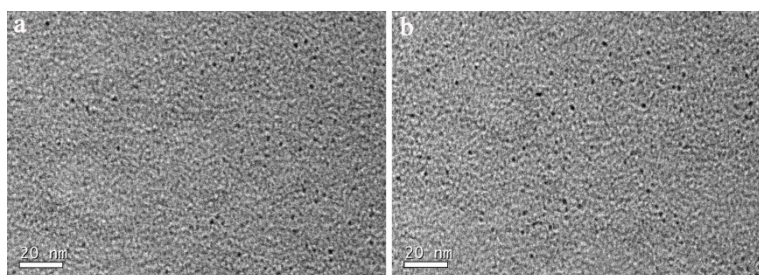


Fig. S2 (a) TEM image of AuNCs; (b) TEM image of AuNCs incubated with Cys (1 mM) and Hcy (1 mM).

3. The absorption spectra of NBD-SAr response to Cys and Hcy

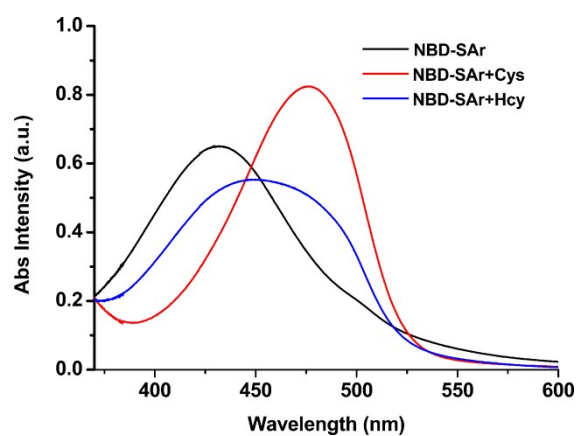


Fig. S3 UV-vis absorption spectra of NBD-SAr (10 μM) in the presence of 10 equiv of Cys and Hcy.

4. NMR and ESI-MS spectra

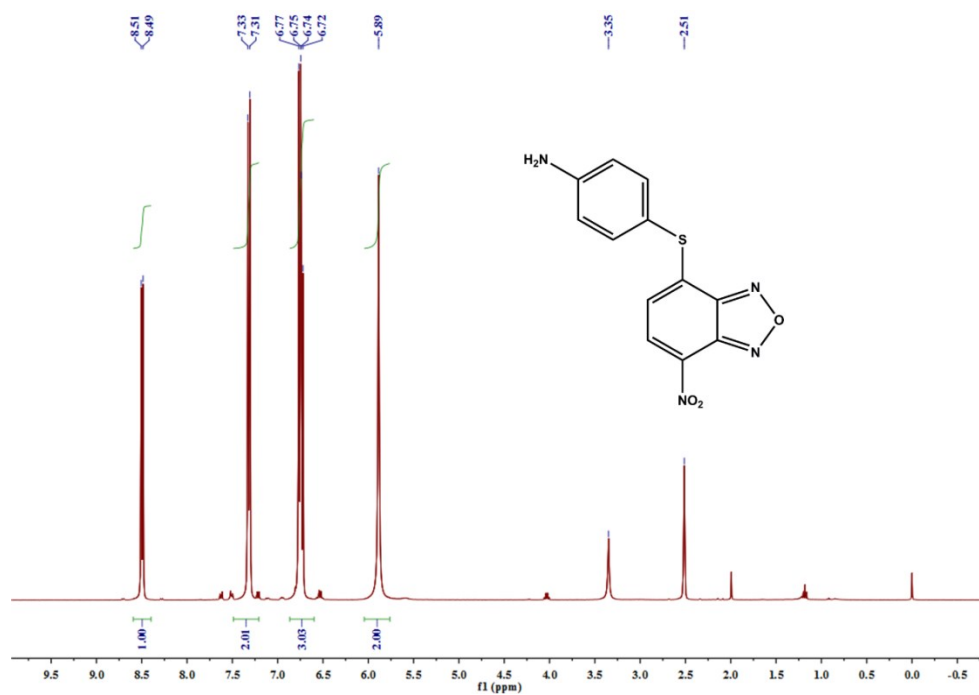


Fig. S4 The ¹H NMR (400 MHz) spectra of compound NBD-SAr in DMSO-*d*₆.

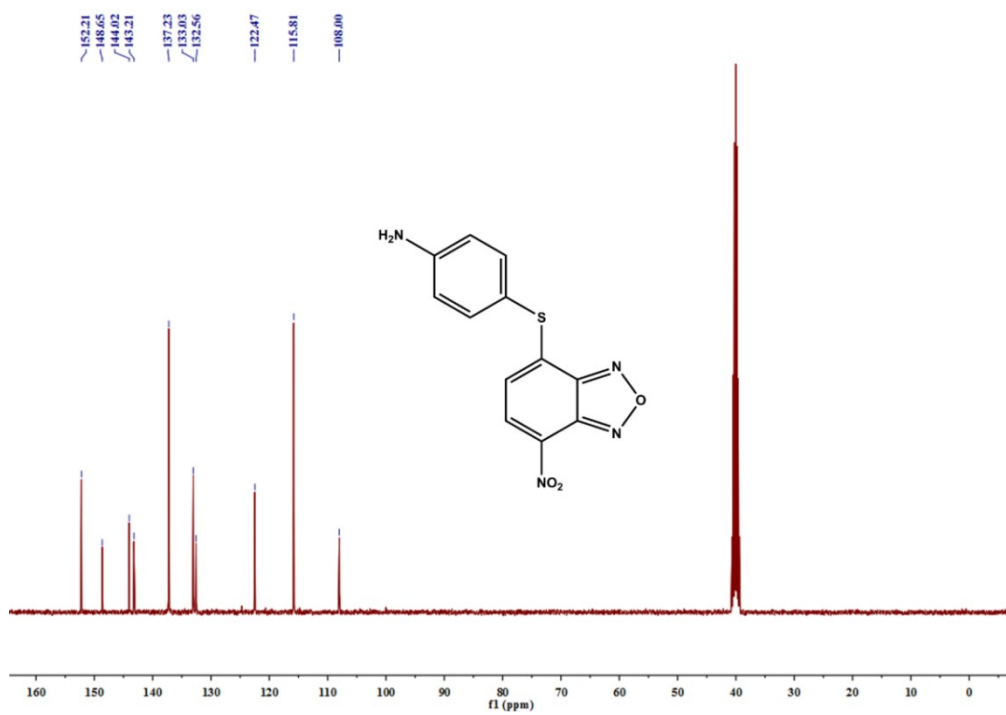


Fig. S5 The ¹³C NMR (100 MHz) spectra of compound NBD-SAr in DMSO-*d*₆.

Mass Spectrum SmartFormula Report

Analysis Info

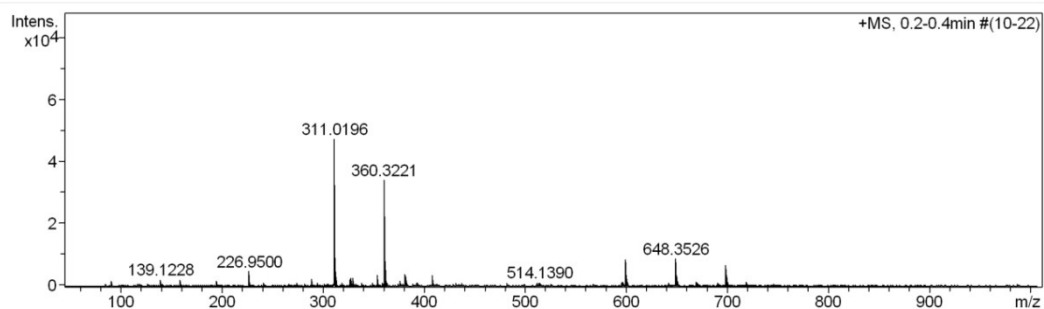
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Operator BDAL@CN
 Instrument / Ser# micrOTOF-Q II 10453

Acquisition Parameter

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Scan End	1000 m/z	Set Collision Cell RF	150.0 Vpp	Set Divert Valve	Waste



Meas. m/z	#	Formula	m/z	err [ppm]	Me an err [ppm]	rd b	N- R ul e	e- Conf	m Sig ma	Std l	St d Me an m/z	St d l Va rN or m	St d m/z Dif f	Std Com b Dev
311.0196	1	C 12 H 8 N 4 Na O 3 S	311.0209	4.3	4.5	10.5	ok	even	5.2	9.7	1.5	5.1	1.3	874.6
	2	C 10 H 9 N 4 Na 2 O 3 S	311.0185	-3.4	-3.2	7.5	ok	even	8.1	16.6	1.1	6.6	1.3	870.9

Fig. S6 The ESI-MS spectra of compound NBD-SAr.

Generic Display Report

Analysis Info

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Instrument micrOTOF-Q

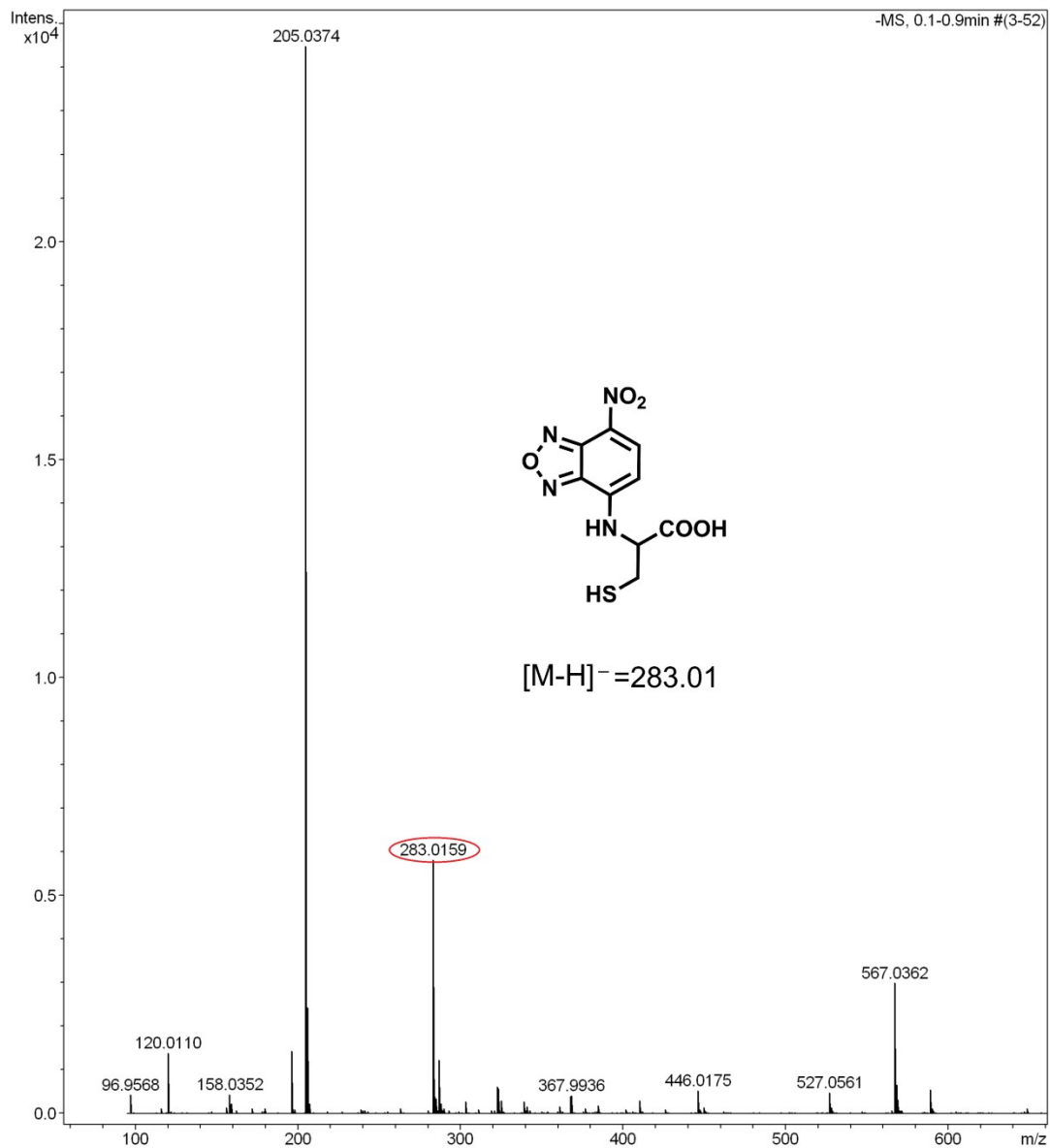


Fig. S7 The ESI-MS spectra of NBD-SAr+Cys with negative ion mode.

Generic Display Report

Analysis Info

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Instrument micrOTOF-Q

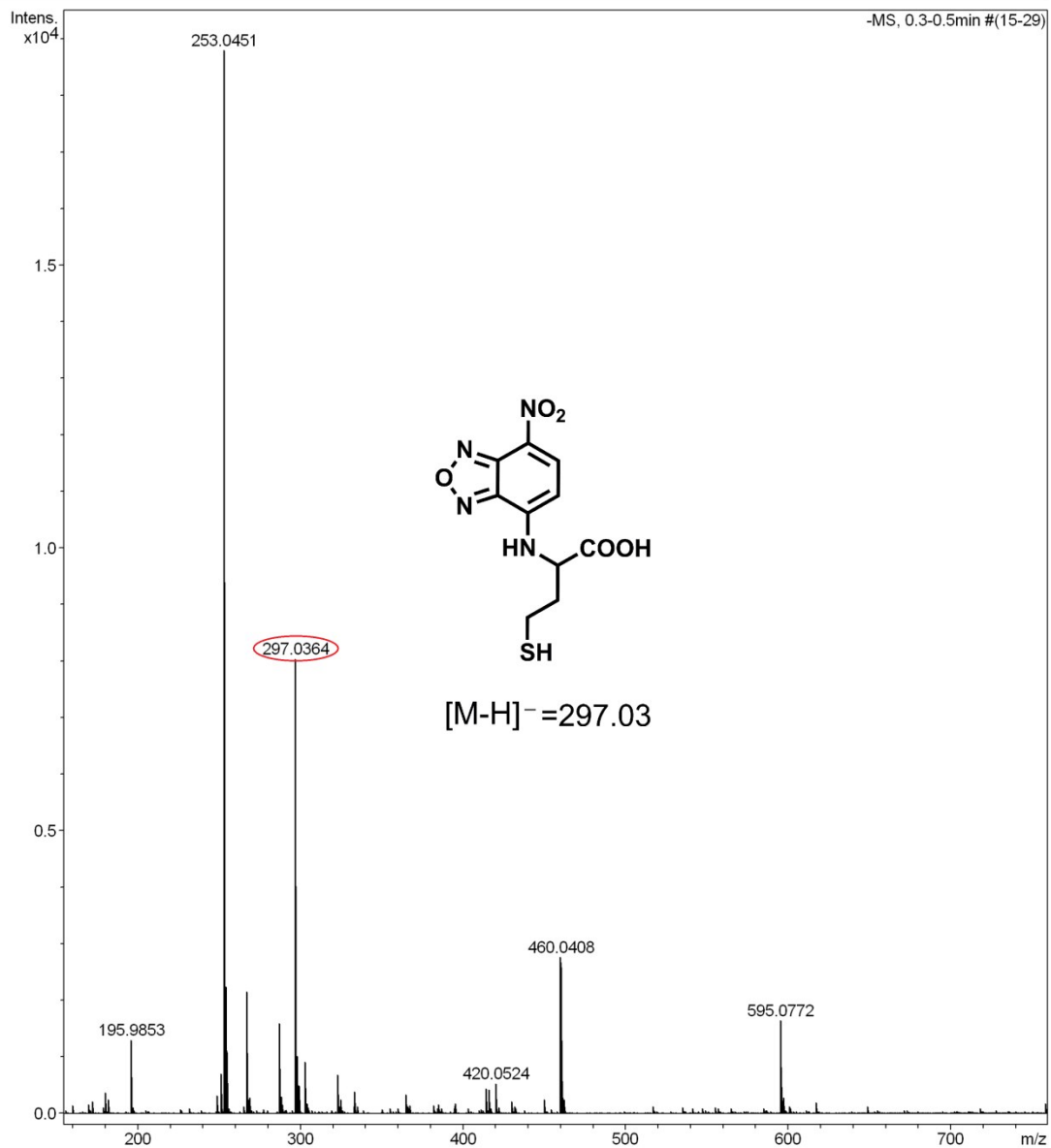


Fig. S8 The ESI-MS spectra of NBD-SAr+Hcy with negative ion mode.