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

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

**Fig. S1** (a) The fluorescence spectra of AuNCs (40 μg 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 (1mM) and Hcy (1mM).

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 $^1$H NMR (400 MHz) spectra of compound NBD-SAr in DMSO-$d_6$.  

**Fig. S5** The $^{13}$C NMR (100 MHz) spectra of compound NBD-SAr in DMSO-$d_6$.  

Fig. S6 The ESI-MS spectra of compound NBD-SAr.
**Fig. S7** The ESI-MS spectra of NBD-SAr+Cys with negative ion mode.
Fig. S8 The ESI-MS spectra of NBD-SAr+Hcy with negative ion mode.