

## Supporting Information

### **A novel isophorone-based red-emitting fluorescent probe for selective detection of sulfide anion in water for *in vivo* imaging**

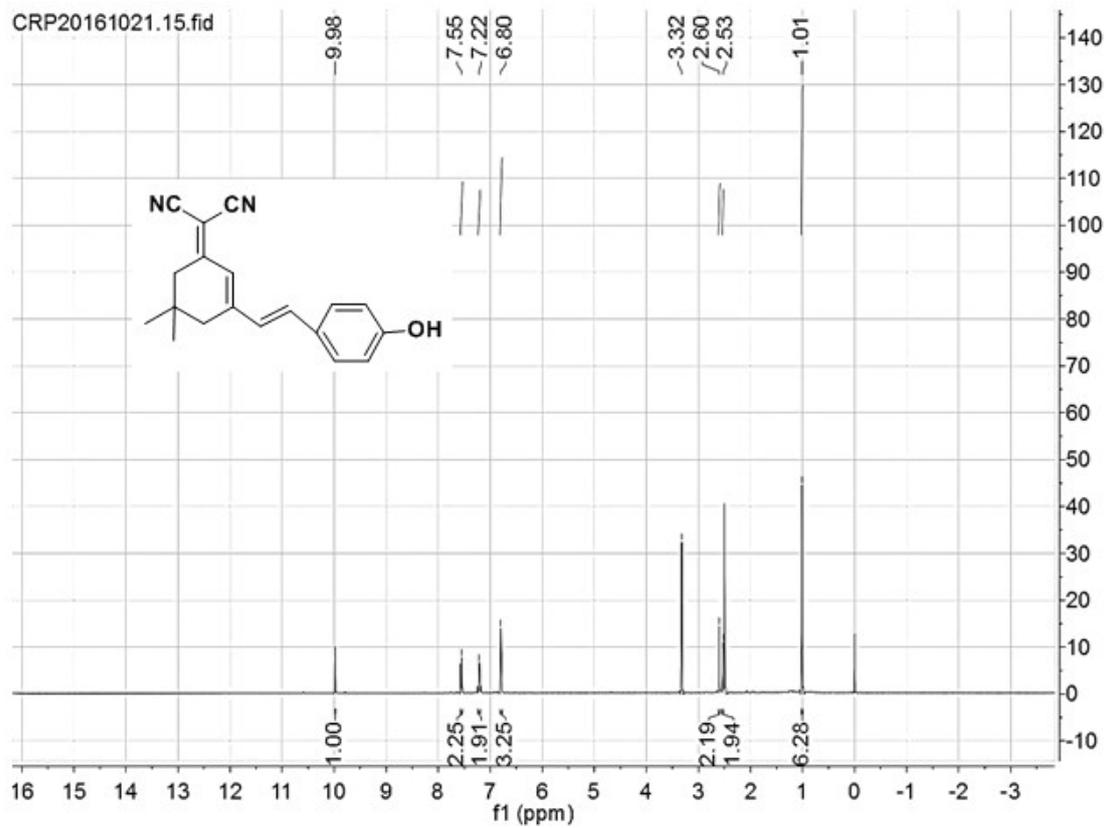
**Figure S1:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and ESI-MS of the compound **2**.

**Figure S2:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and ESI-MS of the **SP1**.

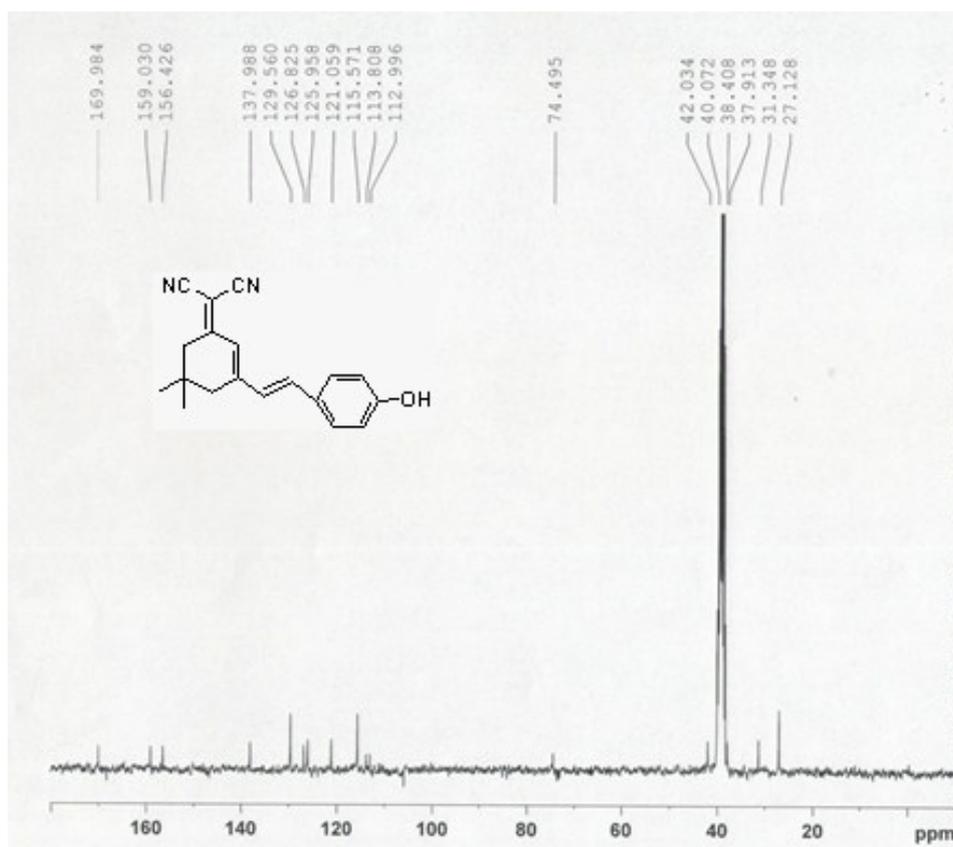
**Figure S3:** The fluorescence spectral changes of **SP1** ( $30\ \mu\text{M}$ ) after the addition of Cys, Hcy, GSH and thioglycol ( $0$ - $200\ \mu\text{M}$ )

**Figure S4:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and ESI-MS of the **SP1**+  $\text{S}^{2-}$ .

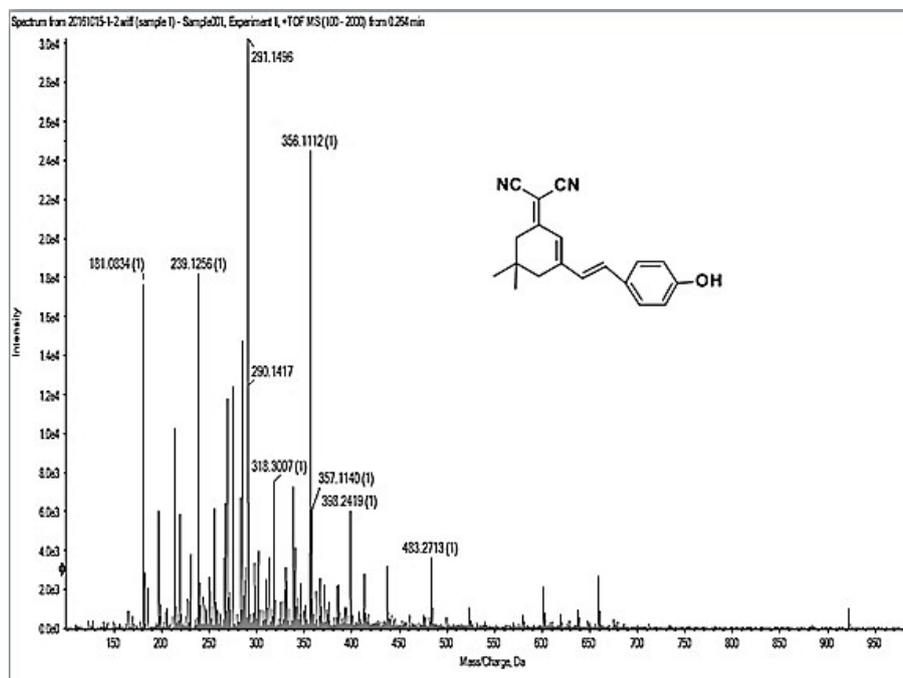
**Figure S1:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR, and ESI-MS of the compound **2**.



The  $^1\text{H}$  NMR (600MHz) spectra of the compound **2** in  $\text{DMSO}-d_6$ .

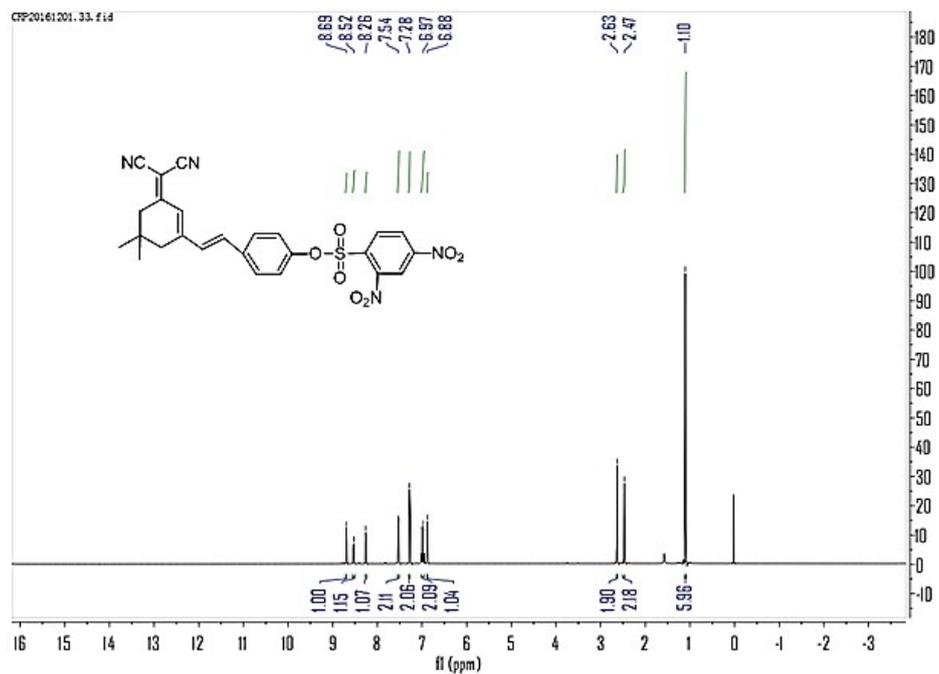


The  $^{13}\text{C}$  NMR (150 MHz) spectra of the compound **2** in  $\text{DMSO-}d_6$ .

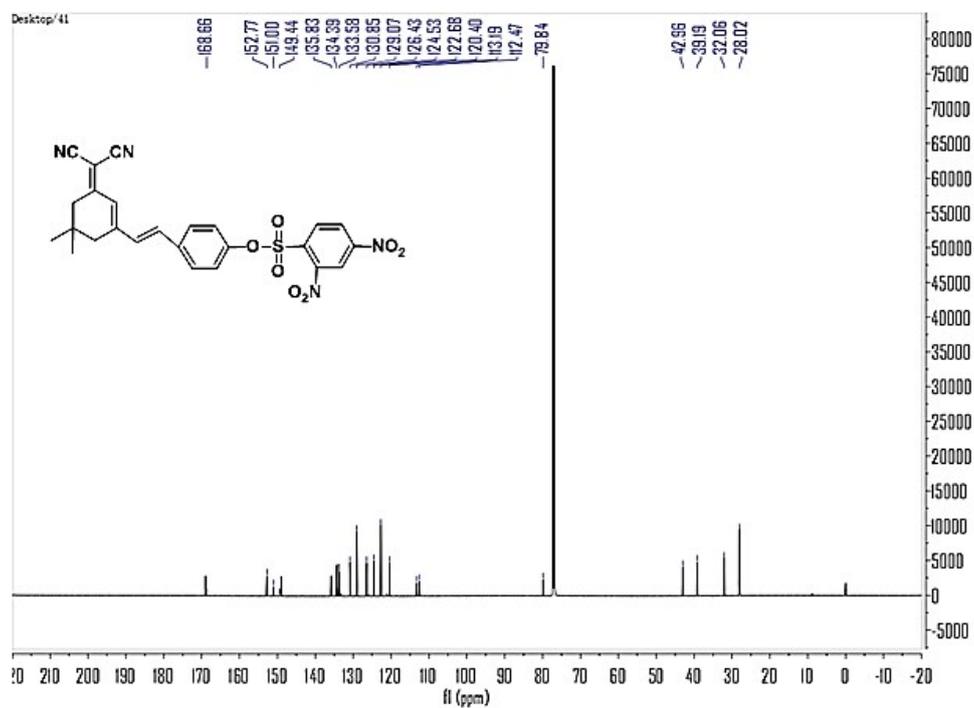


The ESI-MS of the compound **2**:  $m/z$ :  $[\text{M} + \text{H}]^+$  calcd for  $\text{C}_{19}\text{H}_{16}\text{N}_2\text{O}$   $[\text{M}+1]$ : 291.14, found 291.15

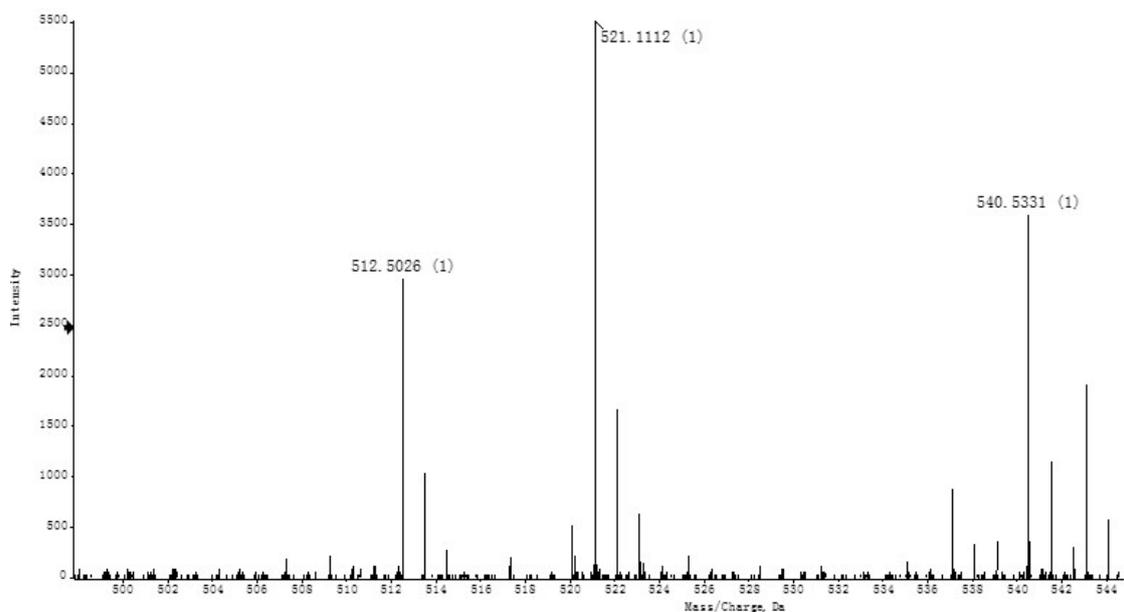
**Figure S2:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR, and ESI-MS of the **SP1**.



The  $^1\text{H}$  NMR (600MHz) spectra of the **SP1** in  $\text{DMSO-}d_6$ .

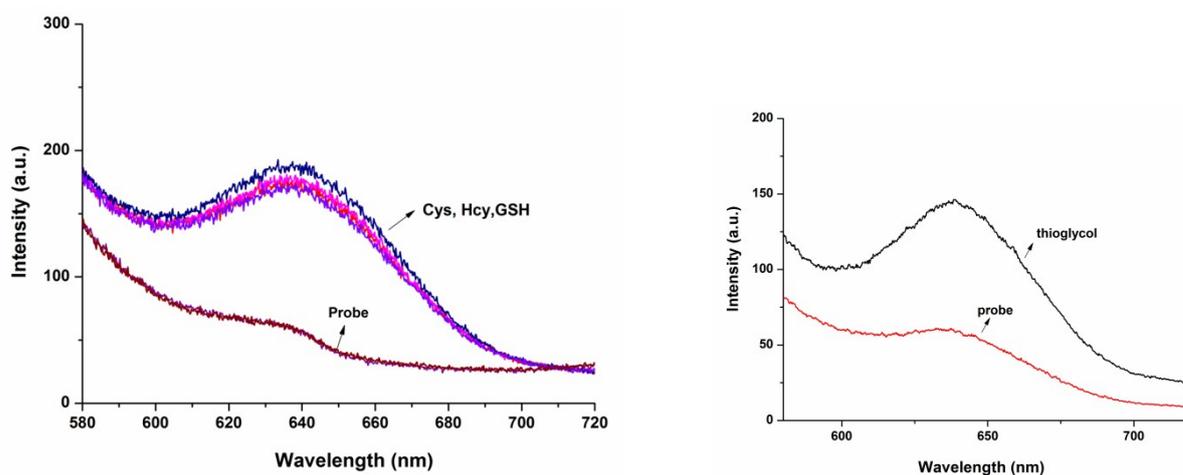


The  $^{13}\text{C}$  NMR (150 MHz) spectra of the **SP1** in  $\text{DMSO-}d_6$ .

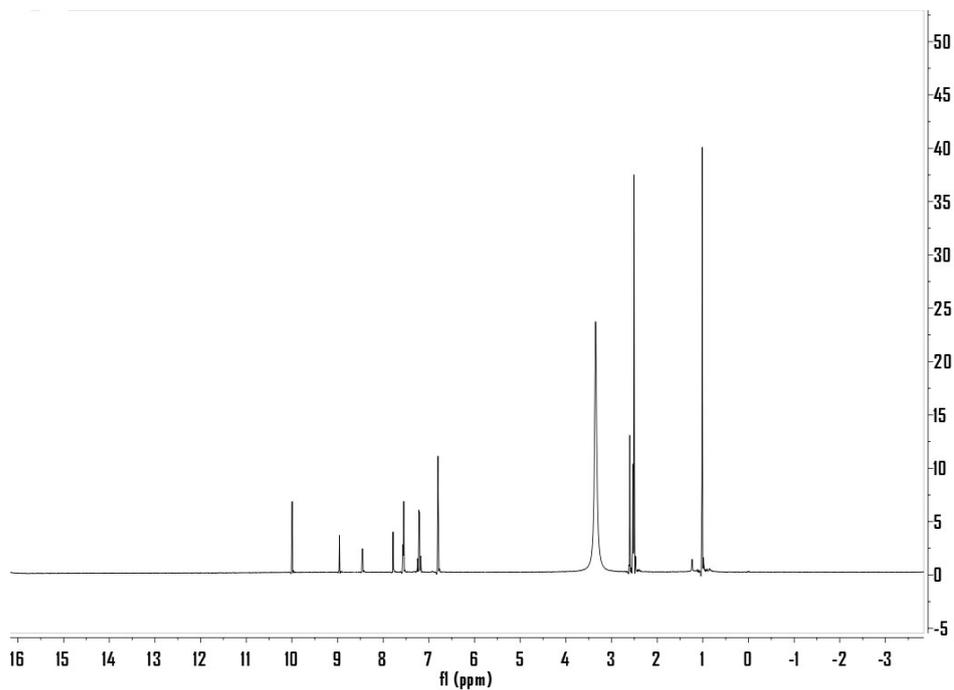


The ESI-MS of the **SP1**:  $m/z$ :  $[M + H]^+$  calcd for  $C_{19}H_{16}N_2O$   $[M+1]^+$ : 521.11, found 521.11.

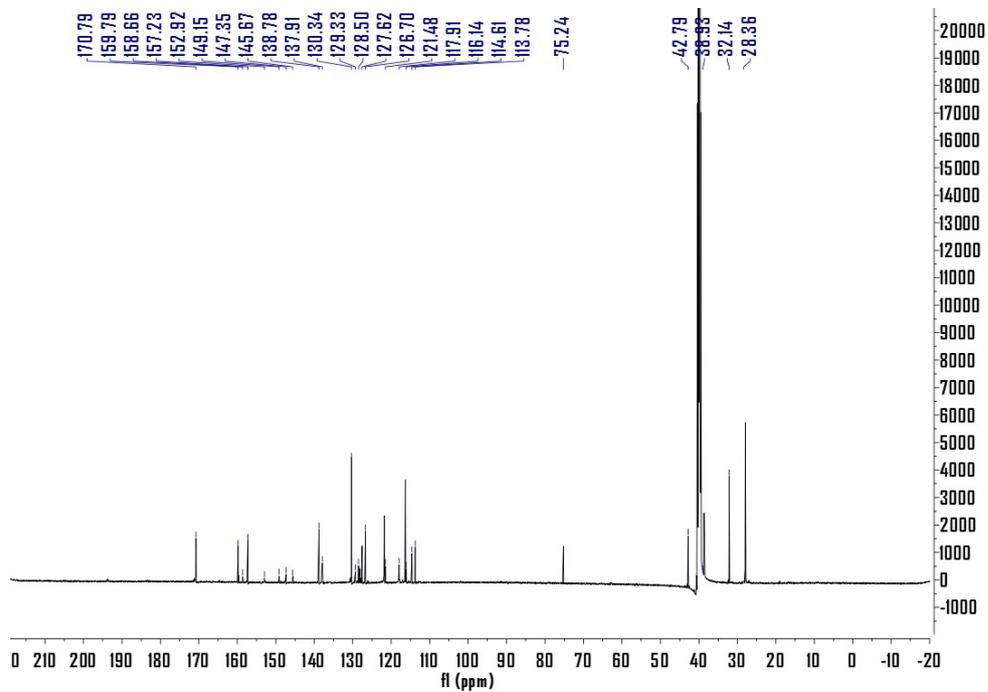
**Figure S3:** The fluorescence spectral changes of **SP1** ( $10 \mu M$ ) after the addition of  $^-Cys$ , Hcy, GSH and thioglycol ( $0-200 \mu M$ ). Spectra were acquired in PBS buffer ( $\lambda_{ex} = 523$  nm, slit: 10 nm/10 nm).



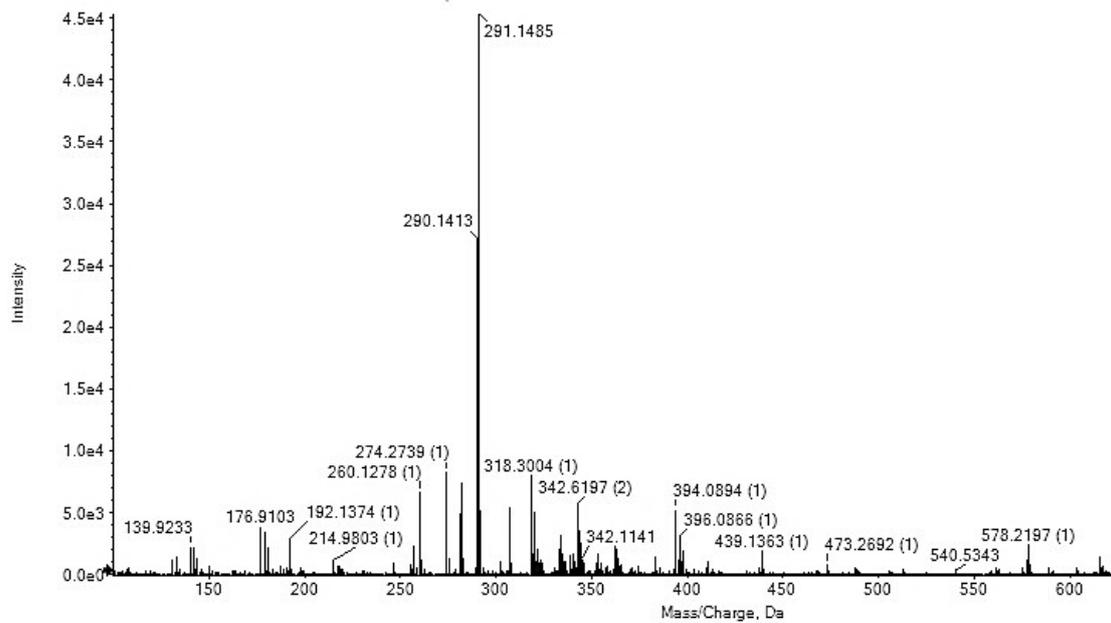
**Figure S4:**  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR and ESI-MS of the **SP1**+  $\text{S}^{2-}$ .



The  $^1\text{H}$  NMR (600MHz) spectra of the **SP1** after the addition of  $\text{S}^{2-}$  in  $\text{DMSO-}d_6$ .



The  $^{13}\text{C}$  NMR (150MHz) spectra of the **SP1** after the addition of  $\text{S}^{2-}$  in  $\text{DMSO-}d_6$ .



The ESI-MS of the **SP1** after the addition of  $S^{2-}$  in  $DMSO-d_6$