Supporting Information

A Phenazine–based Near-infrared (NIR) Chemodosimeter for Cysteine Obtained via a Carbonyl-assisted Cycloaddition Process

Yi Qu,[a,] Xiao Zhang,[b] Linlin Wang,[a] Huiran Yang,[c] Lin Yang,[b] Jian Cao[a]*

and Jianli Hua[b,]*

a.College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, 201620, Shanghai China.

b. Key Laboratory for Advanced Materials and Institute of Fine Chemicals, East China Universityof Science and Technology, 200237,Shanghai, China.

c. Department of Chemistry, Fudan University, 200433,Shanghai, China.

Outline

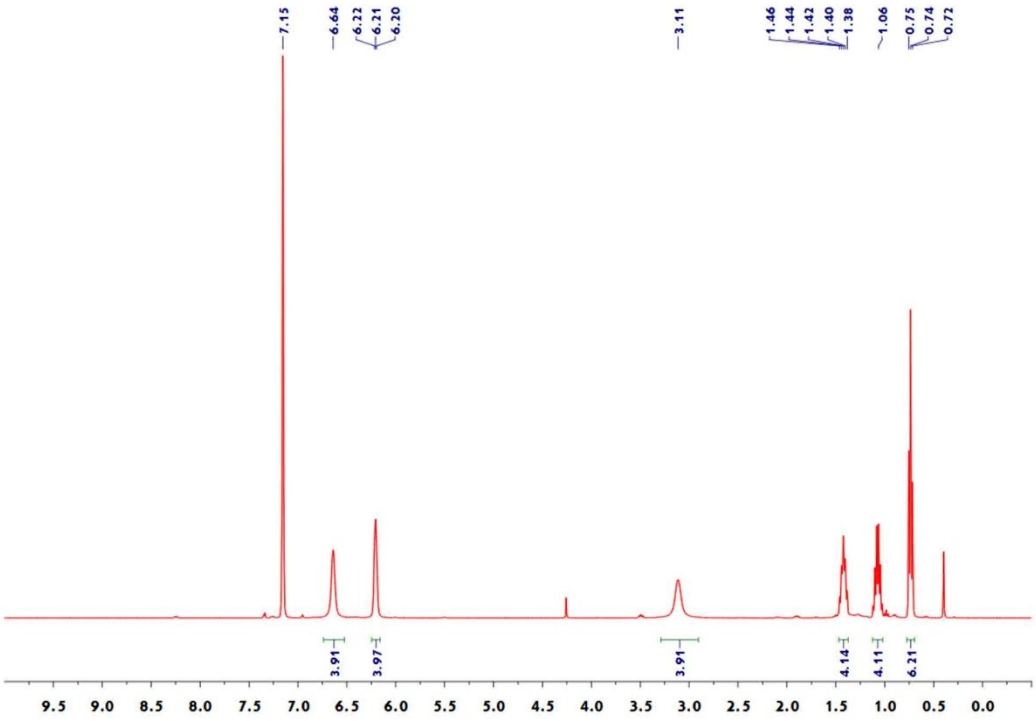

Figure S1. ^{1}H NMR of compound **2** in C_6D_6.

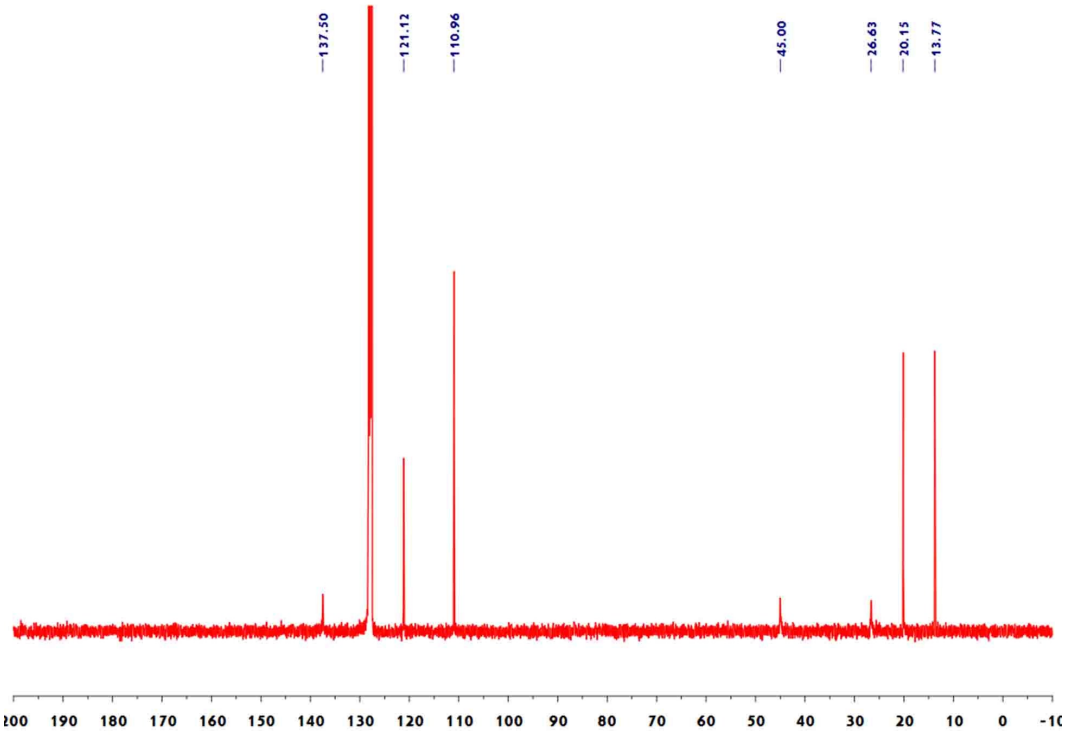

Figure S2. ^{13}C NMR of compound **2** in C_6D_6.

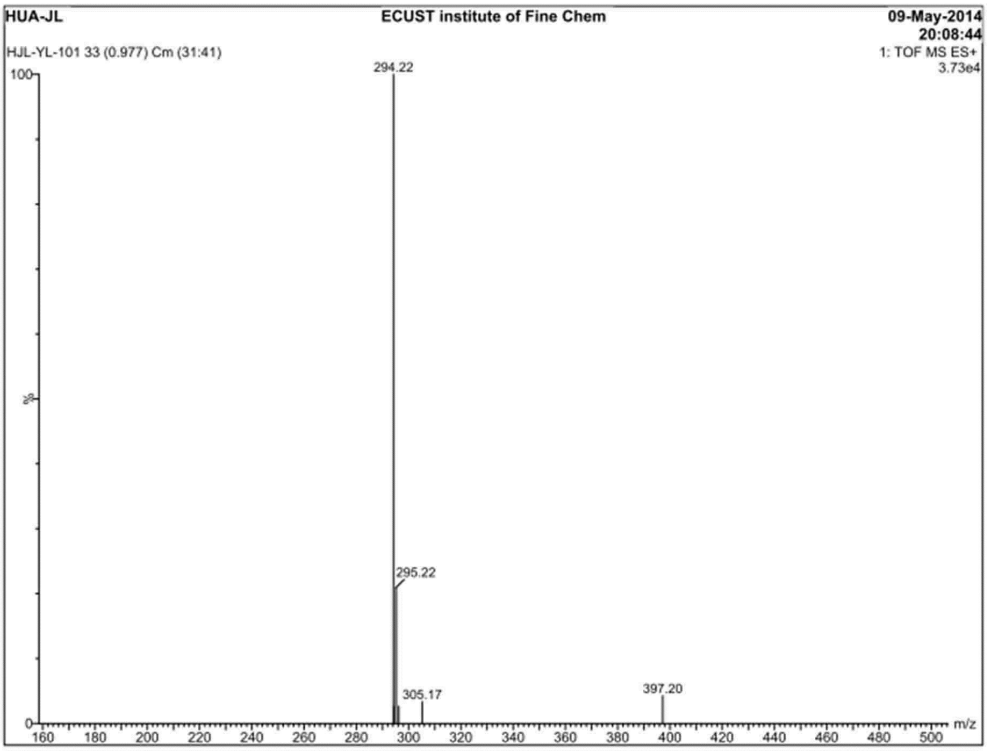

Figure S3. ESI-MS spectrum of compound **2**

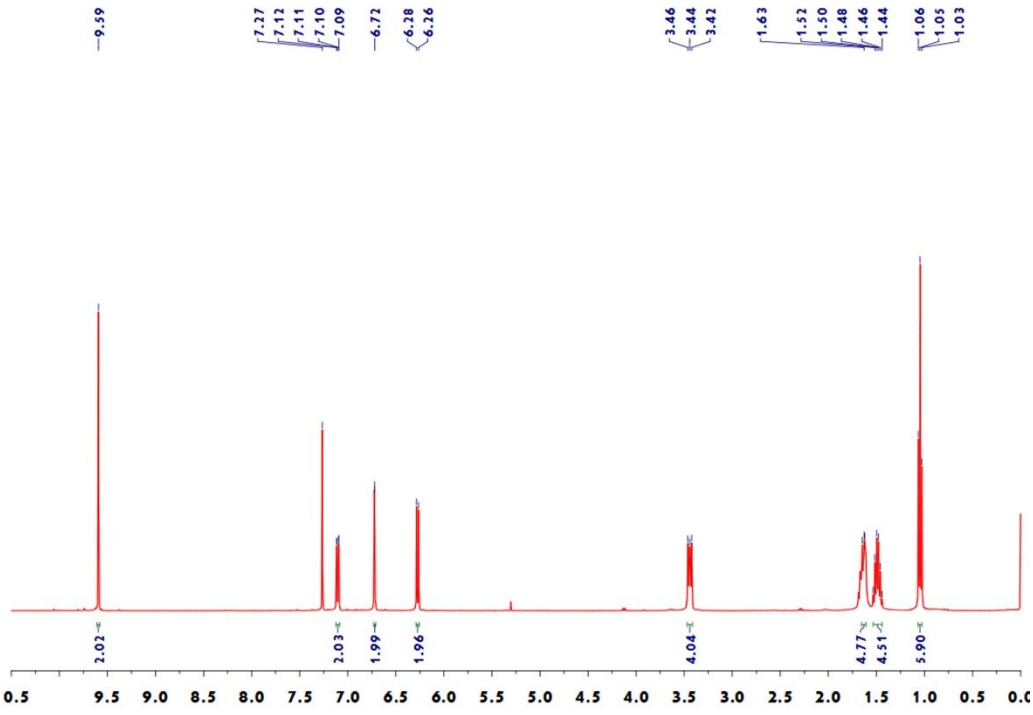

Figure S4. ^{1}H NMR spectrum of compound **3** in $CDCl_3$.

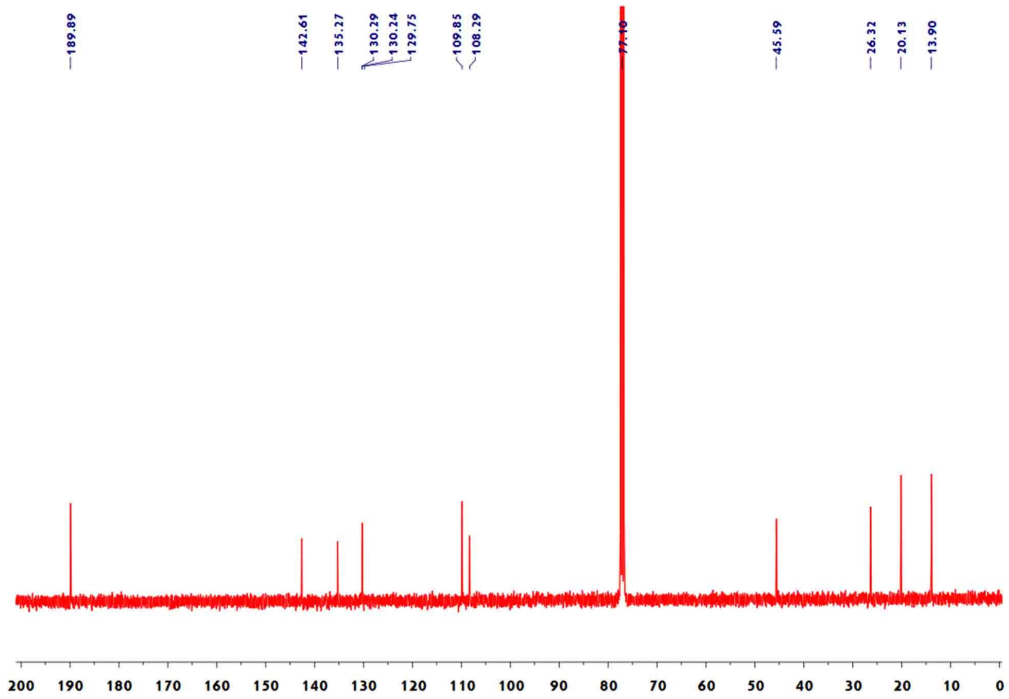

Figure S5. ^{13}C NMR spectrum of compound **3** in $CDCl_3$.

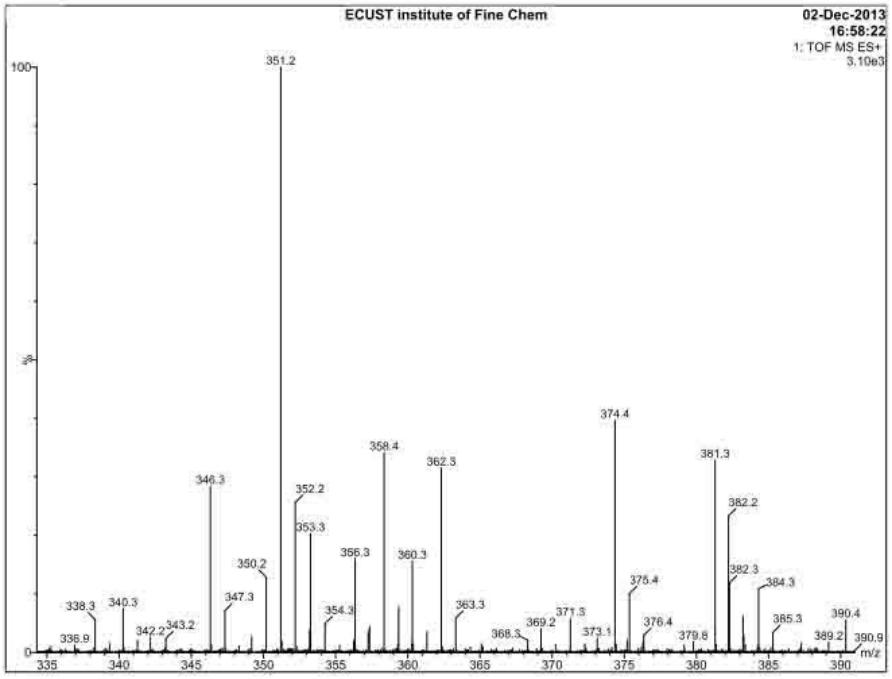

Figure S6. ESI-TOF mass spectrum of **3**

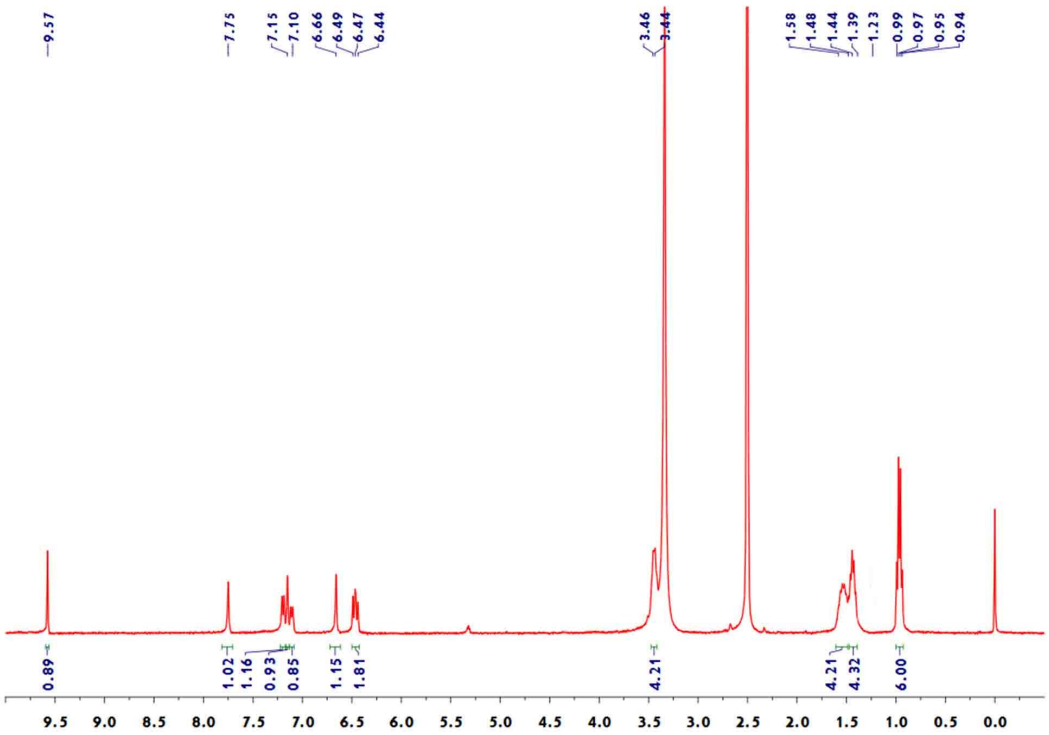

Figure S7. ^{1}H NMR of compound **4** in DMSO-*d*^{6}.

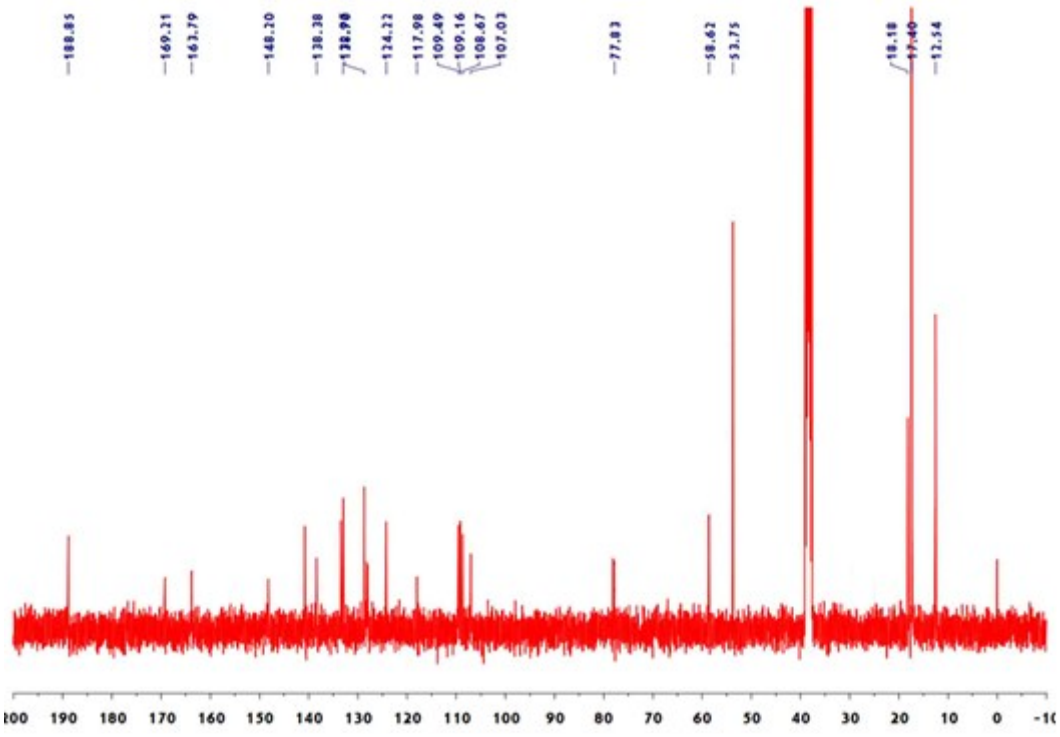

Figure S8. ^{13}C NMR of compound **4** in DMSO-*d*^{6}.

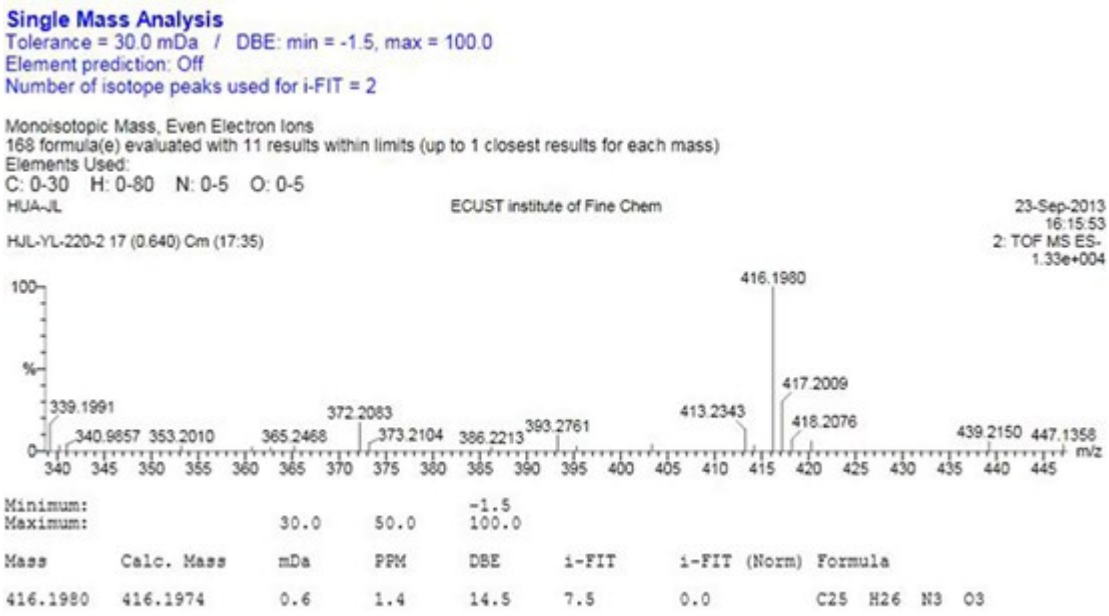

Figure S9. ESI mass spectrum of compound **4**

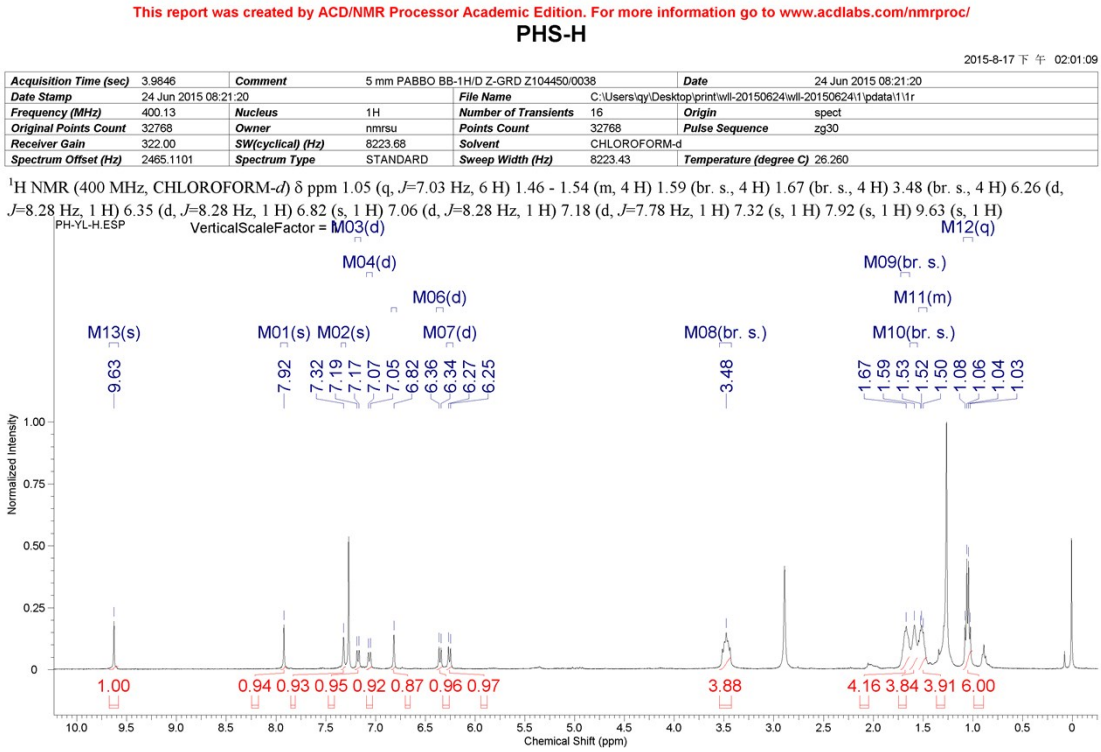

Fig S10. ^{1}H NMR spectrum of **PHS** in $CDCl_3$.

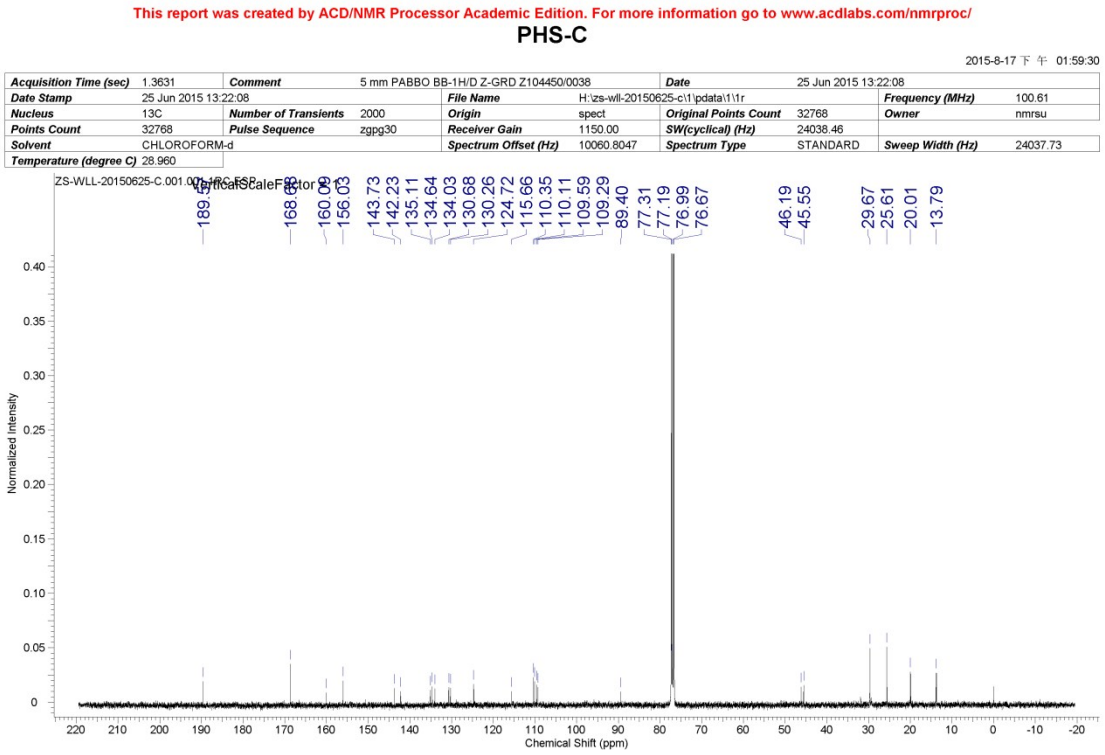

Fig S11. ^{13}C NMR spectrum of **PHS** in $CDCl_3$.

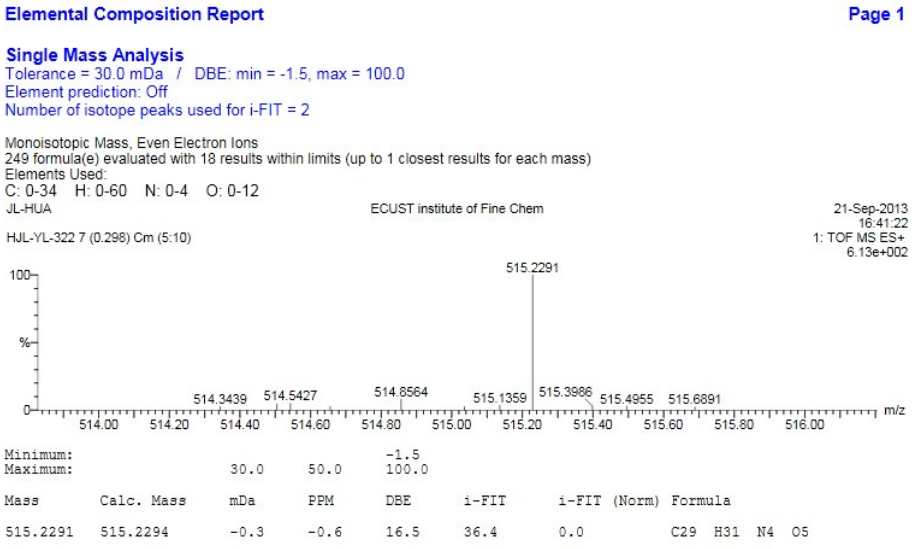

Fig S12. HRMS spectrum of **PHS**

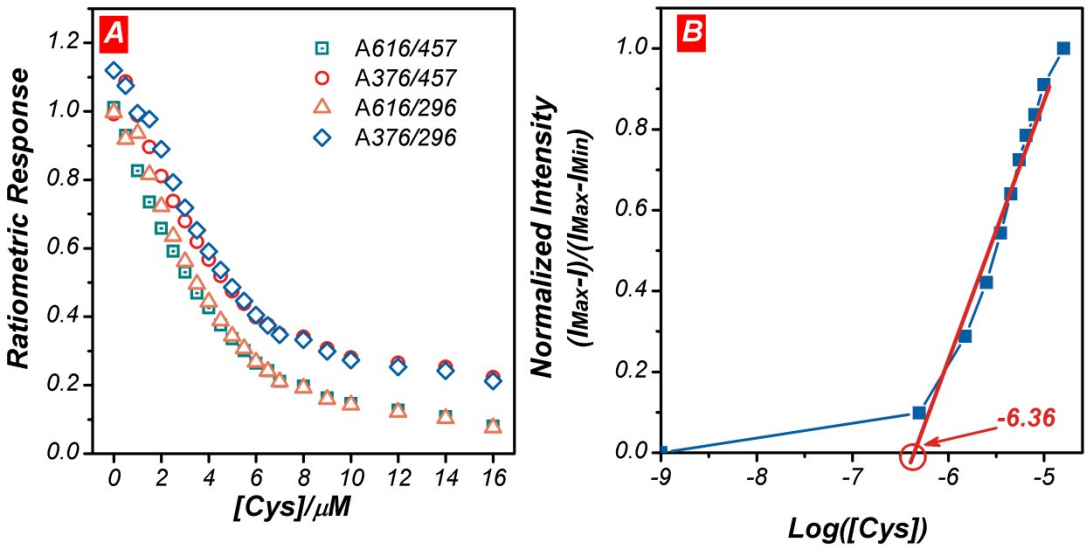

Fig S13. (a) Ratiometric plots of **PHS** with absorbance at 296 nm, 376 nm, 457 nm and 616 nm. (b) Detection limited of **PHS** by UV-vis spectra (Data were collected at 616 nm). The intensity was normalized between the minimum absorbance, found at 16 μM Cys, and the maximum absorbance, found at zero Cys (shown on the graph as 1 nM) .

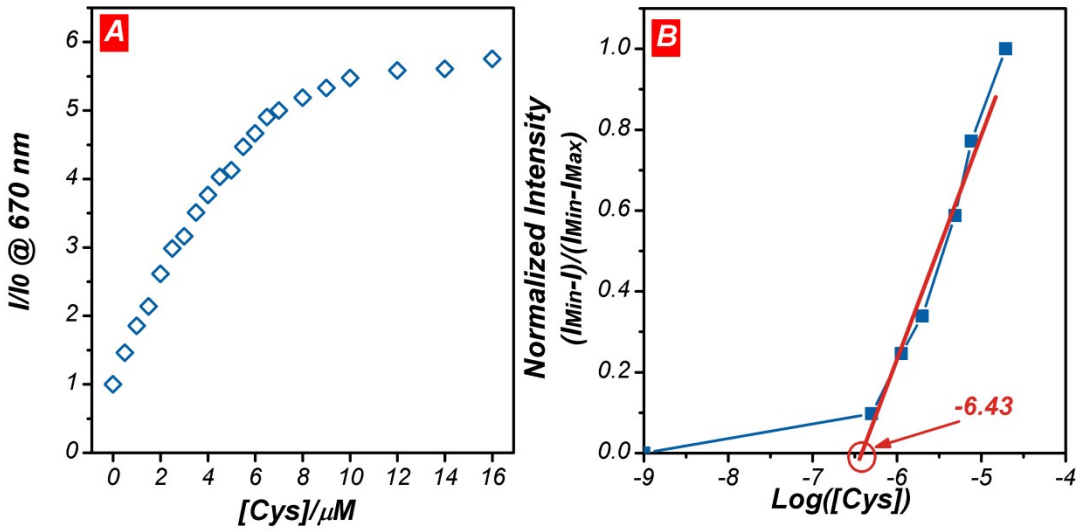

Fig S14. (a) Intensity enhancement plots of **PHS** at 670 nm. (b) Detection limited of **PHS** by emission spectra (Data were collected at 670 nm). The intensity was normalized between the minimum emission intensity, found at zero cys (shown on the graph as 1 nM), and the maximum absorbance, found at 16 μM Cys.

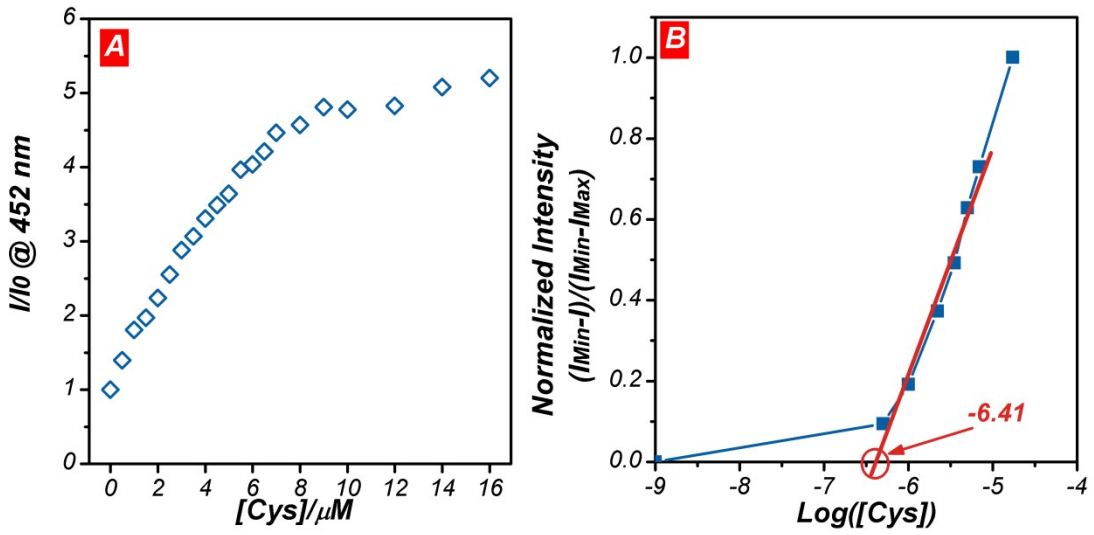

Fig S15. (a) Excitation intensity enhancement plots of **PHS** at 452 nm. (b) Detection limited of **PHS** by emission spectra (Data were collected at 452 nm). The intensity was normalized between the minimum emission intensity, found at zero Cys (shown on the graph as 1 nM), and the maximum absorbance, found at 16 μM Cys.

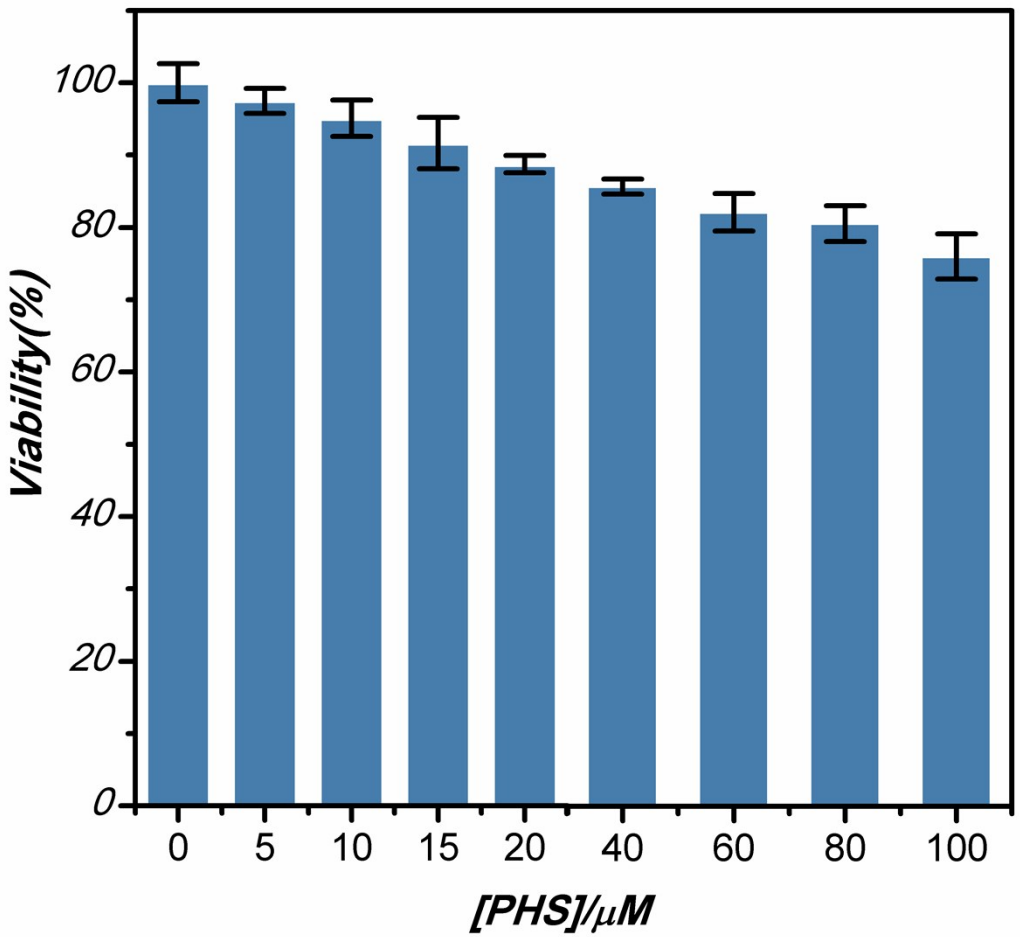

Fig S16.MTT assay of **PHS** with 0~ 100 μM Cys.