Supporting Information

A lysosome-targeting colorimetric and fluorescent dual signal probe for sensitive detecting and bioimaging of hydrogen sulfide

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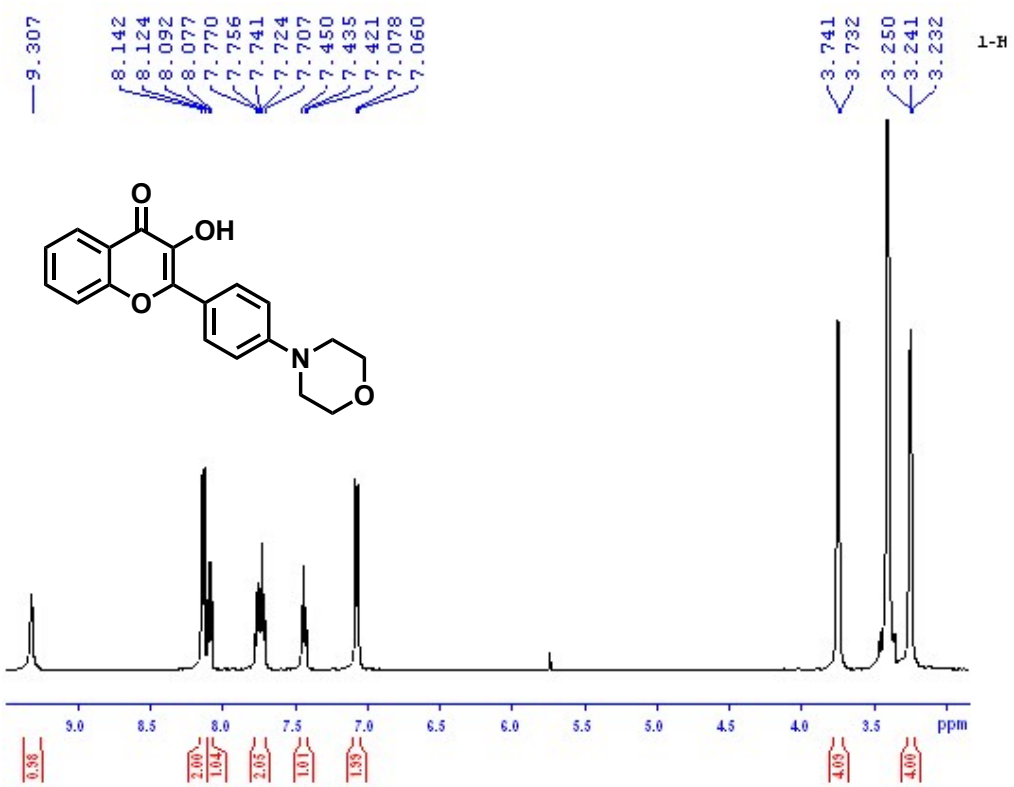

Fig. S1[1]H-NMR spectra ofcompoud**HMC**

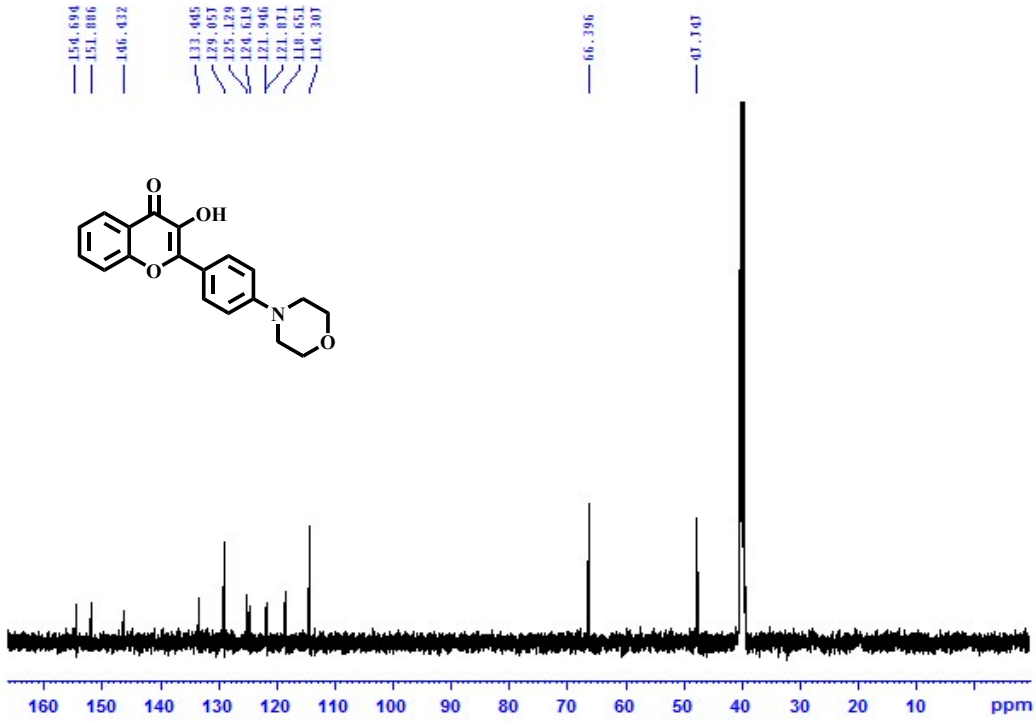

Fig. S2[13]C-NMR spectra ofcompoud**HMC**

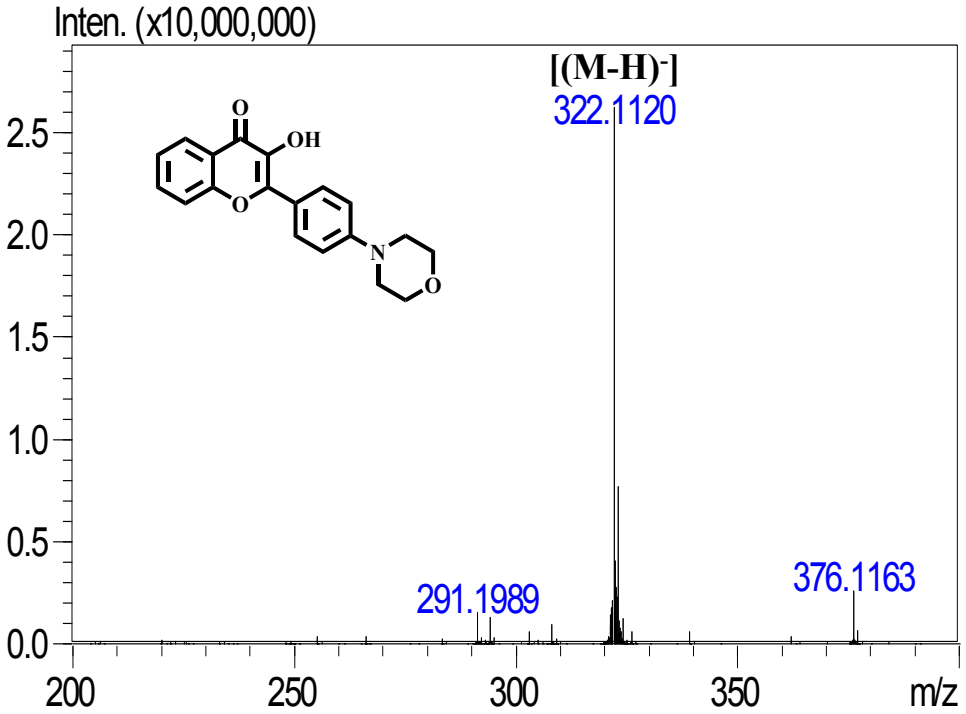

Fig. S3 High resolution mass spectrometryofprobe**HMC**

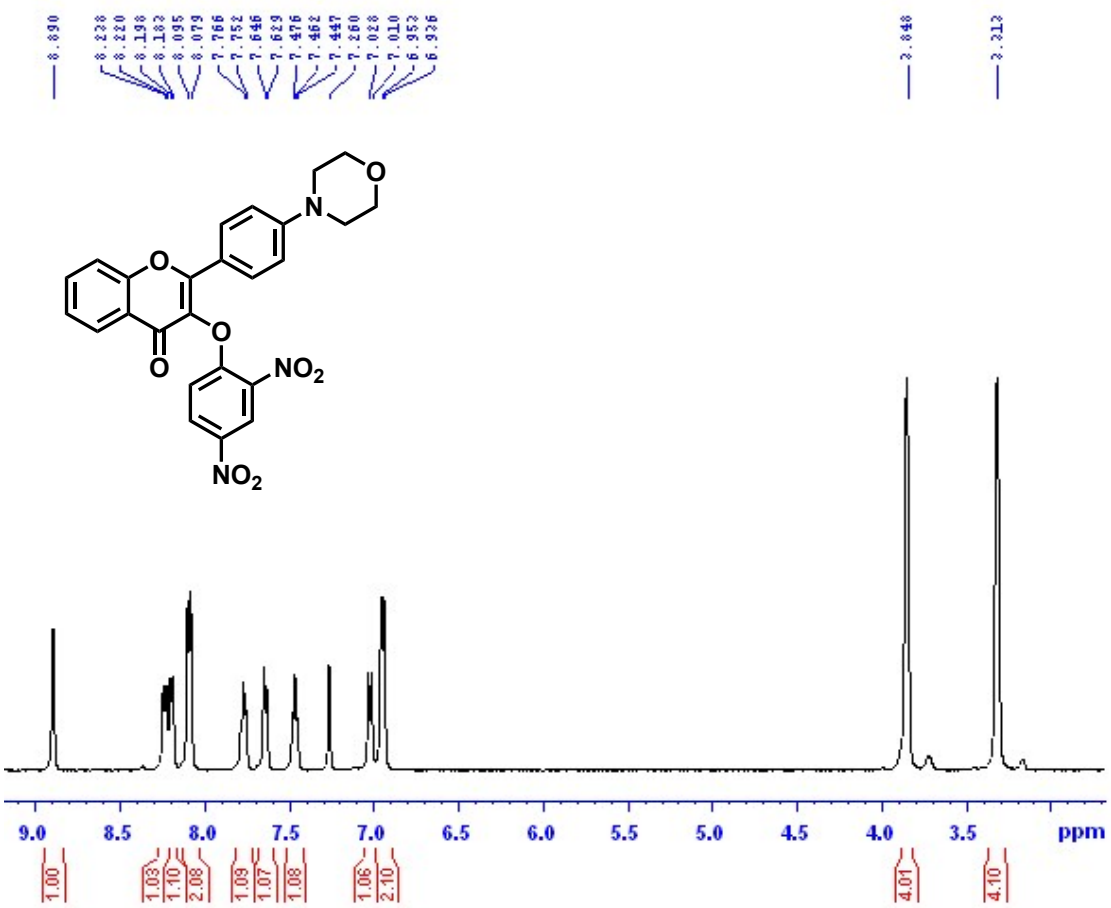

Fig. S4^{1}H-NMR spectra ofcompoud**DMC**

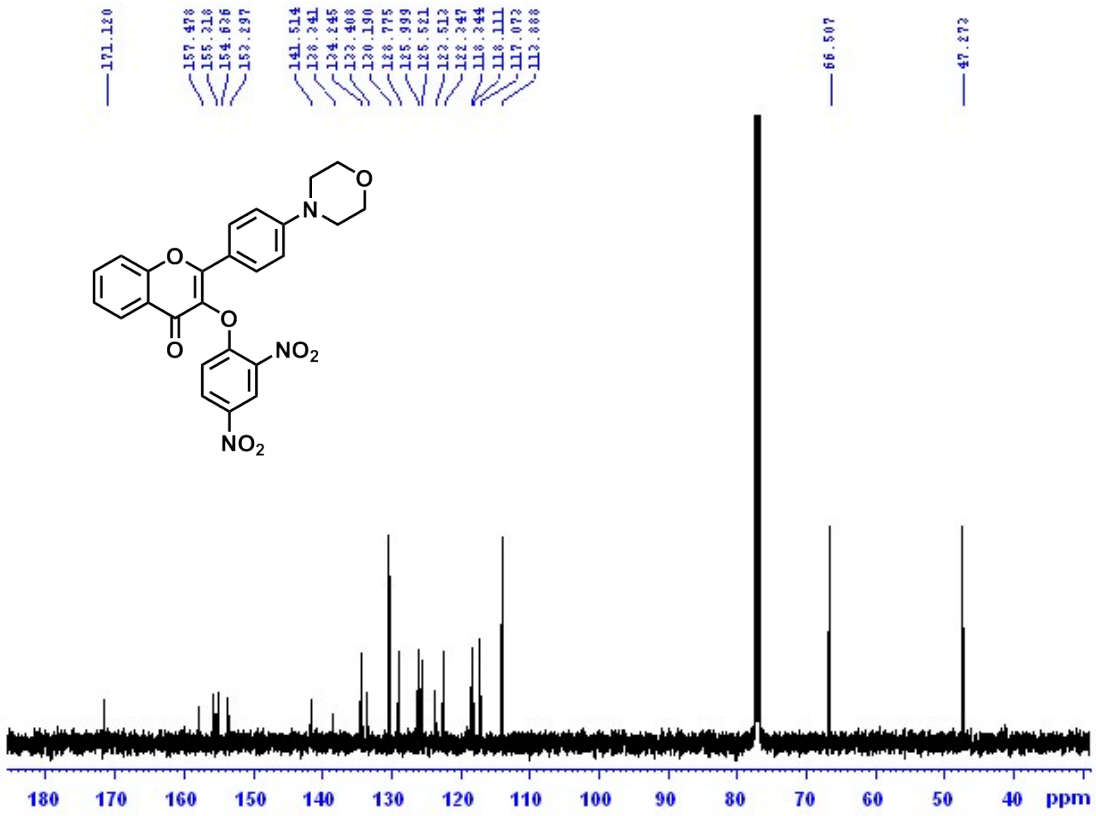

Fig. S5^{13}C-NMR spectra ofcompoud**DMC**

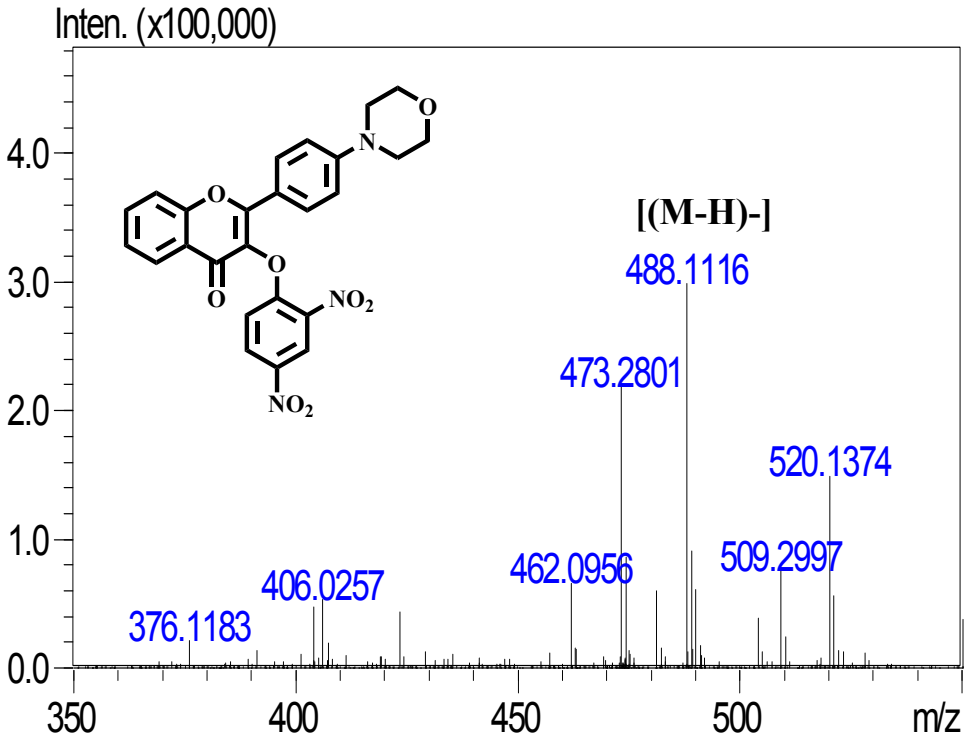

Fig. S6 High resolution mass spectrometryofprobe**DMC**

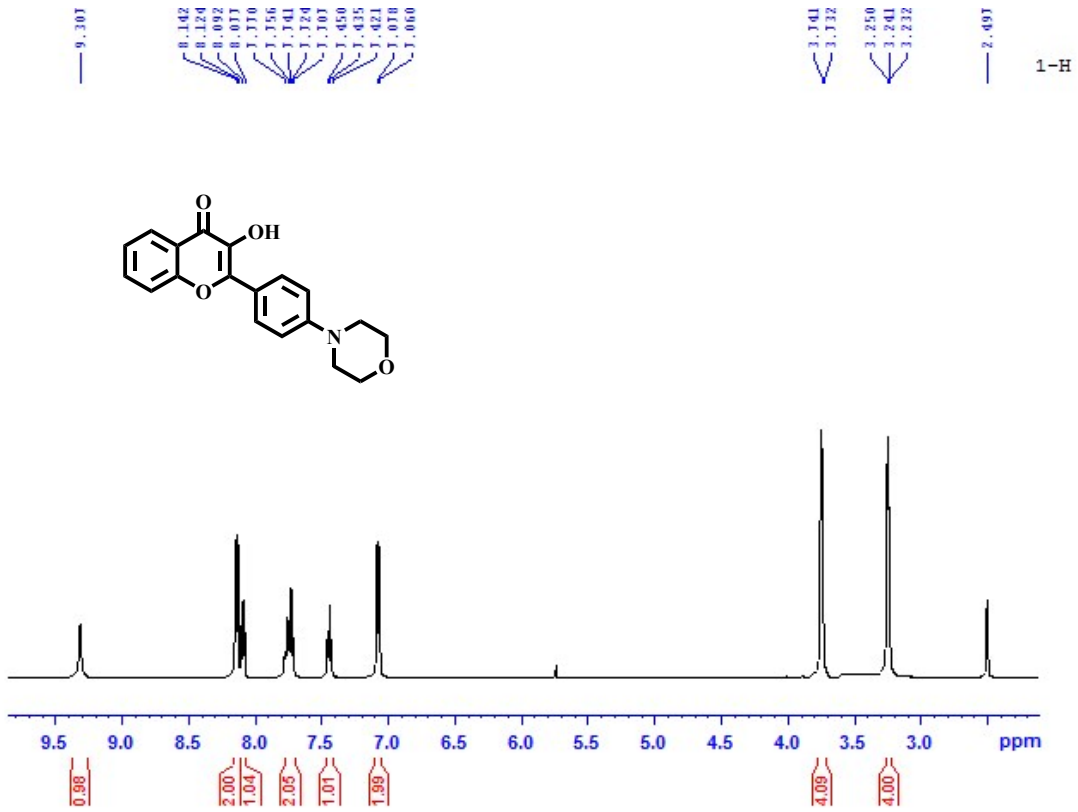

Fig. S7^{1}H-NMR spectra ofprobe**DMC**+ NaHS

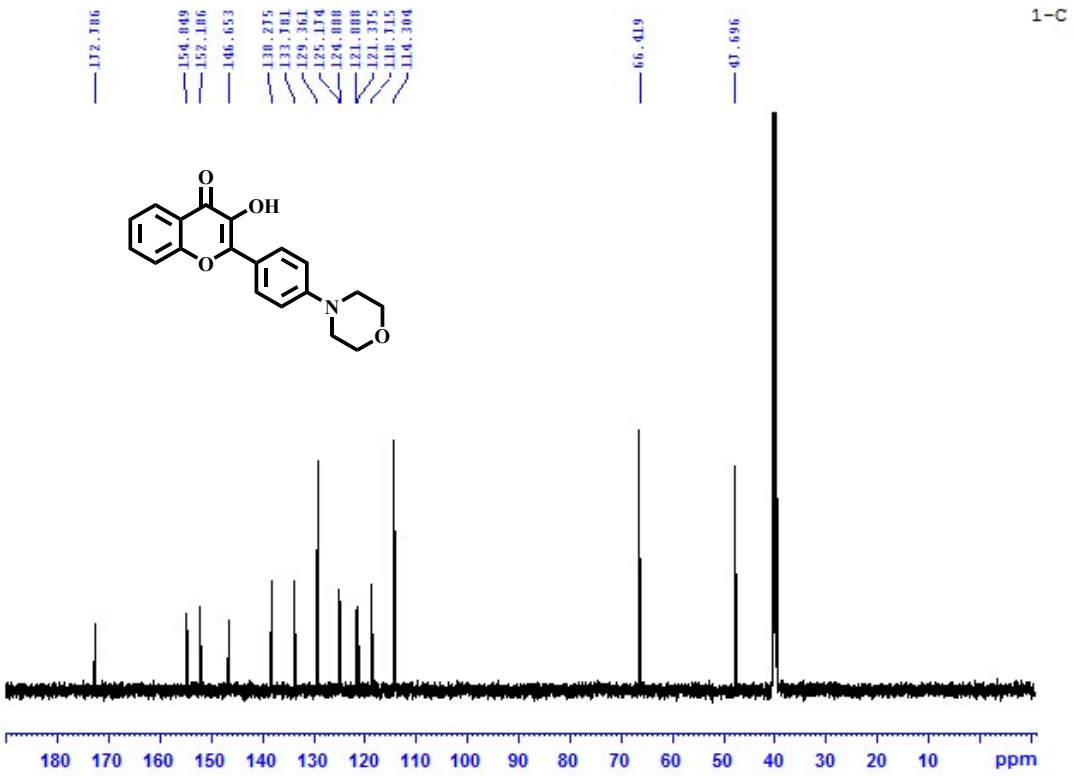

Fig. S8^{13}C-NMR spectra ofprobe**DMC**+ NaHS

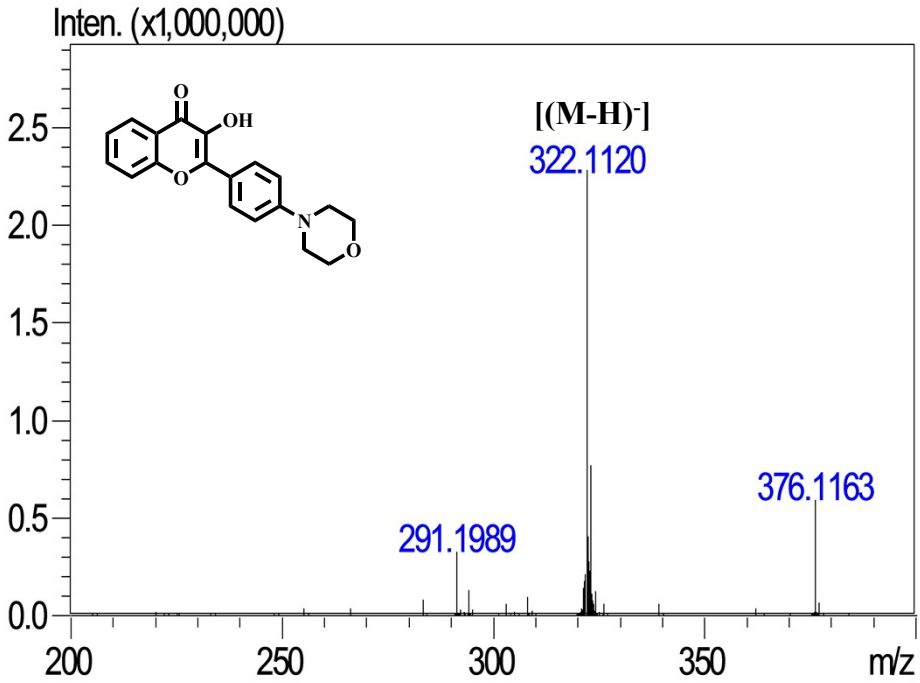

Fig. S9 High resolution mass spectrometryofprobe**DMC**+NaSH

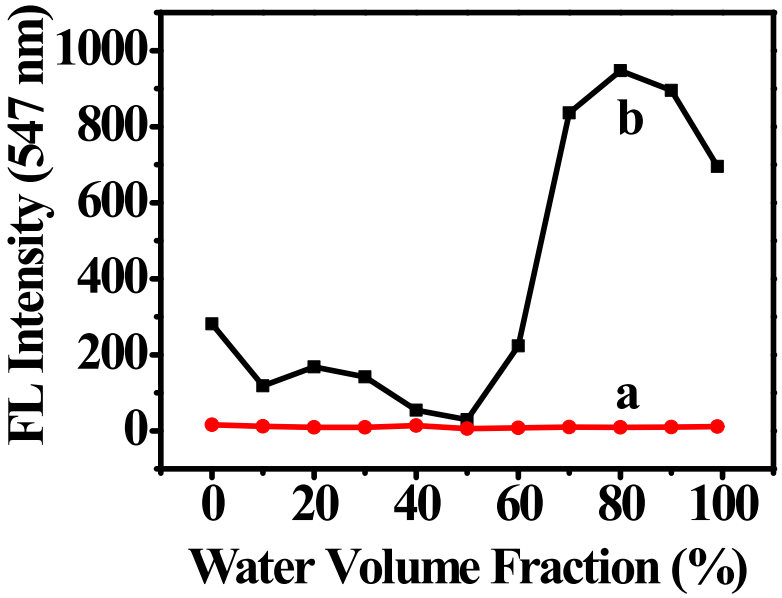

Fig. S10 Fluorescence intensity of **DMC** (10 μM)before (curve a) and after (curve b) the addition of NaHS (100 μM) in DMSO/water mixture with different water fractions; λ_{ex} = 384 nm, λ_{em} = 547 nm.

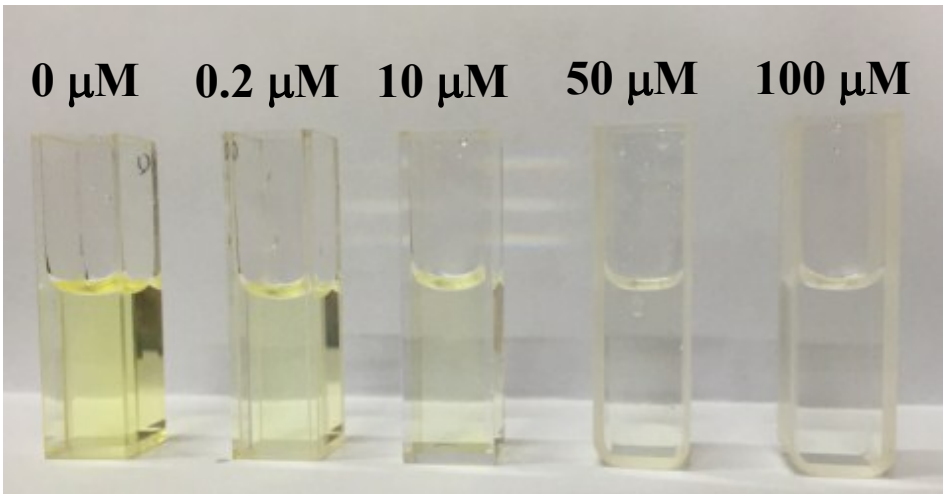

Fig. S11 the color of probe DMC (10 μM) in PBS buffer (10 mM, pH = 7.4, containing 20% DMSO, v/v) changed from yellow to colorlessin the presence of NaHS at various concentrations (0–100 μM)

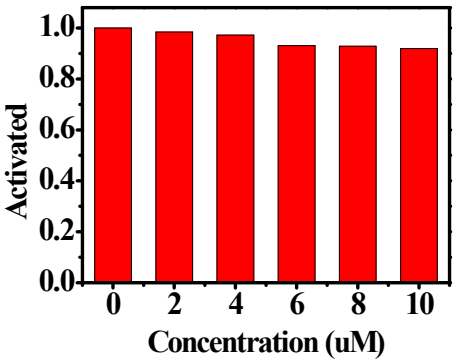

Fig S12 The result of cellular toxicity test

Table S1 Comparison of VariousFluorescent Probes for the Detection of H_2S.

Fluorescent probe	Reaction type	Response time(min)	Subcellular organelle-targeted	Linearrange	LOD	Reference
NIR-H_2S	Thiolysis	7	No	0-15 μM	0.05 μM	[1]
NHS1	Reduction of azide	40	No	0.5-5 μM	0.1 μM	[2]
LCP	demetalationof Ag+	2	No	1−120 μM	0.3μM	[3]
Aza-BODIPY	Reduction of azide	0.5	No	1.3-1.8 μM	0.5 ppm	[4]
Michael acceptor	Michael addition, AIdol condensation	15	No	0.1-50 μM	0.05 μM	[5]
Cy-N_3 engineered QDs	Reduction of azide	～10	No	0-2.0 μM	0.007 μM	[6]
MSNs	Addition	-	No	45-350 μM	2.7 μM	[7]
Piperazine-based naphthalimide	Thiolysis	40	Mitochondria-targeted	10-100 μM	2.46 μM	[8]
UCNPs@mSiO2-MC	Addition	-	No	0−115 μM	0.58 μM	[9]
P-N_3	Reduction of azide	80	No	0-70 μM	0.19 μM	[10]
Michael acceptor	Michael addition, cyclization	30	No	1-100 μM	～1 μM	[11]
Fluorescein	Thiolysis	15	No	20-100 μM	1 μM	[12]
EPS-HS	Thiolysis	20	No	0-60 μM	0.108 μM	[13]
Cu-complex	CuS precipitation	<1	No	low sensitivity		[14-16]
TP-NIR-HS	Thiolysis	30	Mitochondria-targeted	0-5 μM	0.08 μM	[17]
DMC	Thiolysis	60	lysosome-targeted	0.2–10 μM	0.069 μM	Present work

References

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