Supporting Information

Rapid "turn-on" photoluminescence detection of bisulfite in wines and living cells with formyl bearing bis-cyclometalated Ir(III) complex

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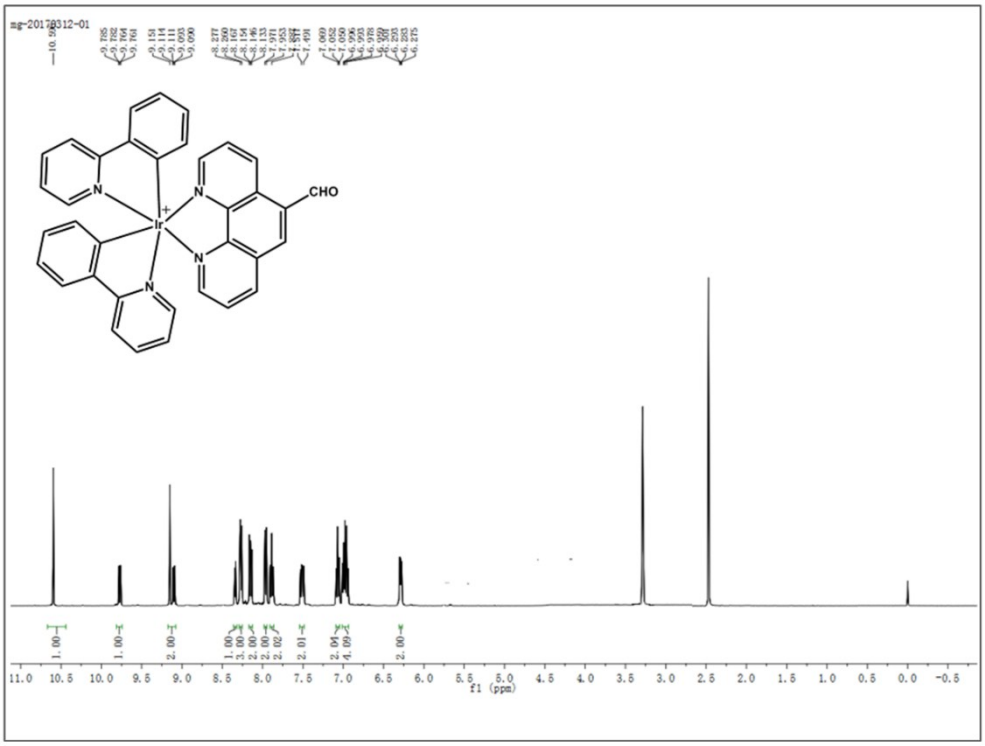

Fig. S1 ^{1}H NMR spectrum of probe **1** in DMSO-d_6.

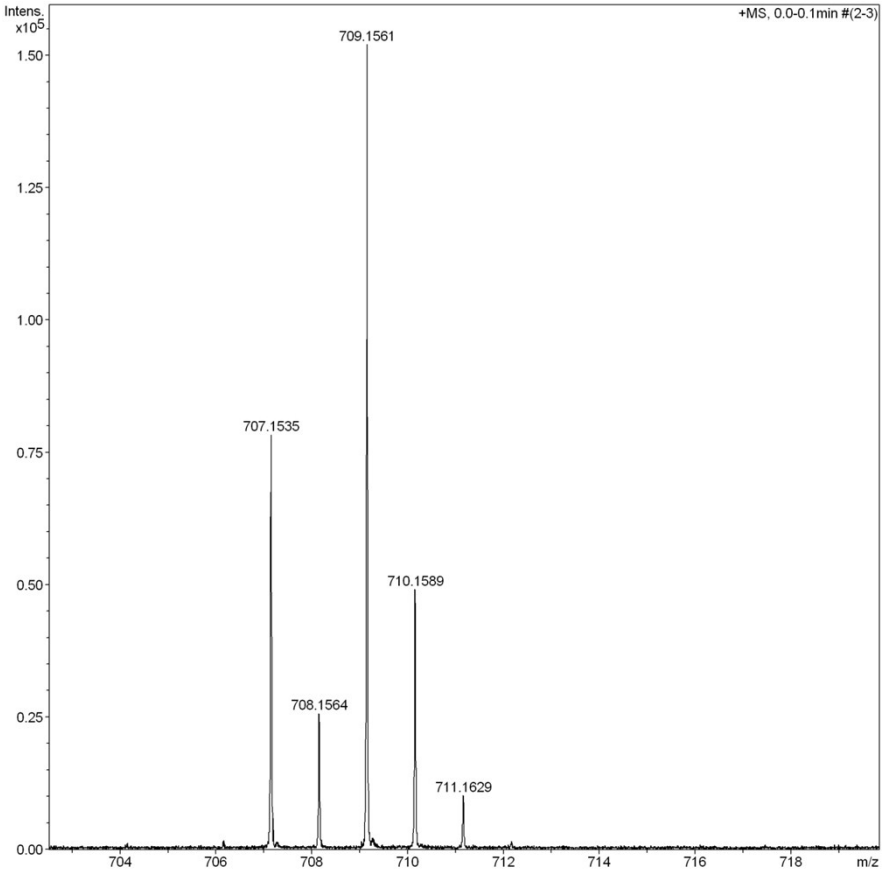

Fig. S2 Mass spectrum of probe **1**.

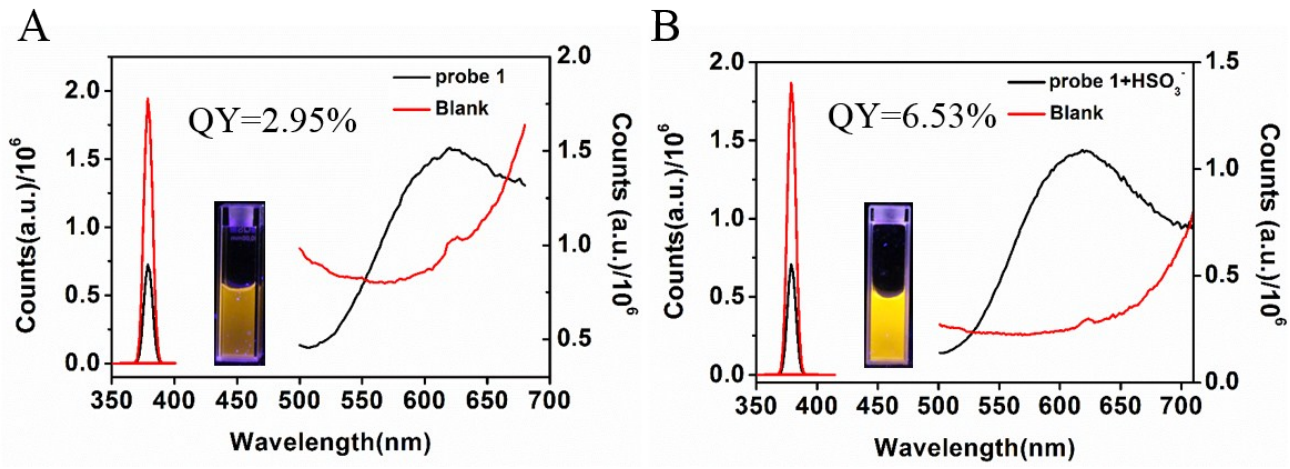

Fig. S3 (A) The photoluminescence quantum yield of probe **1** measured in 10 mM HAc-NaAc buffer solution. The insert is the photoluminescence of probe **1**. (B) The photoluminescence quantum yield of probe **1**+ 30 μM HSO_3^- measured in 10 mM HAc-NaAc buffer solution. The insert is the photoluminescence of 50 μM probe **1**+ 30 μM HSO_3^-.

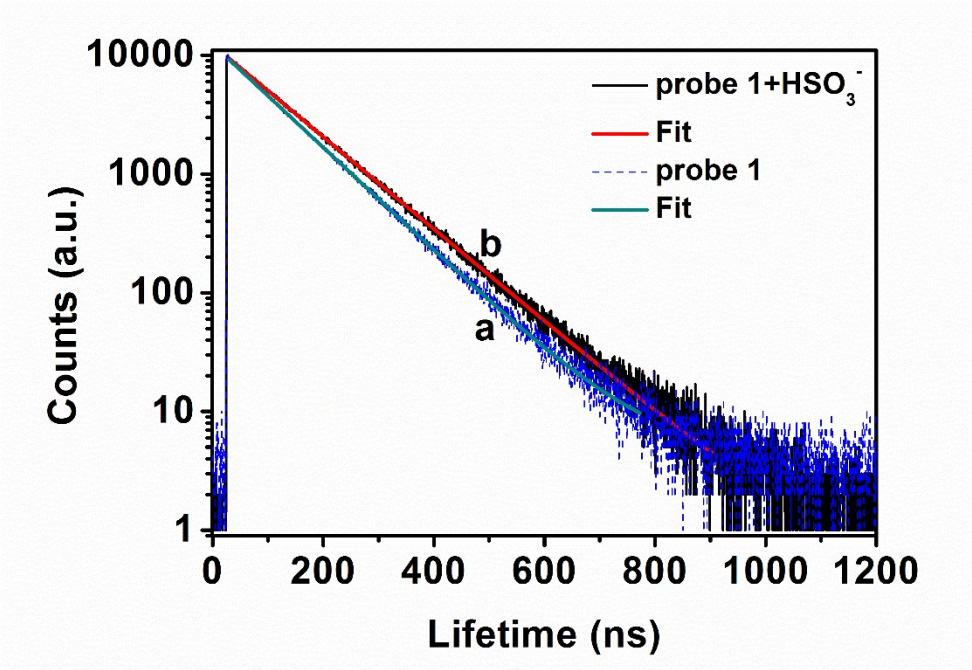

Fig. S4 Lifetime decay curve of 50 μM probe **1** (curve a) and 50 μM probe **1**+ 30 μM HSO_3^- (curve b) in 10 mM HAc-NaAc buffer solution (pH=5.0).

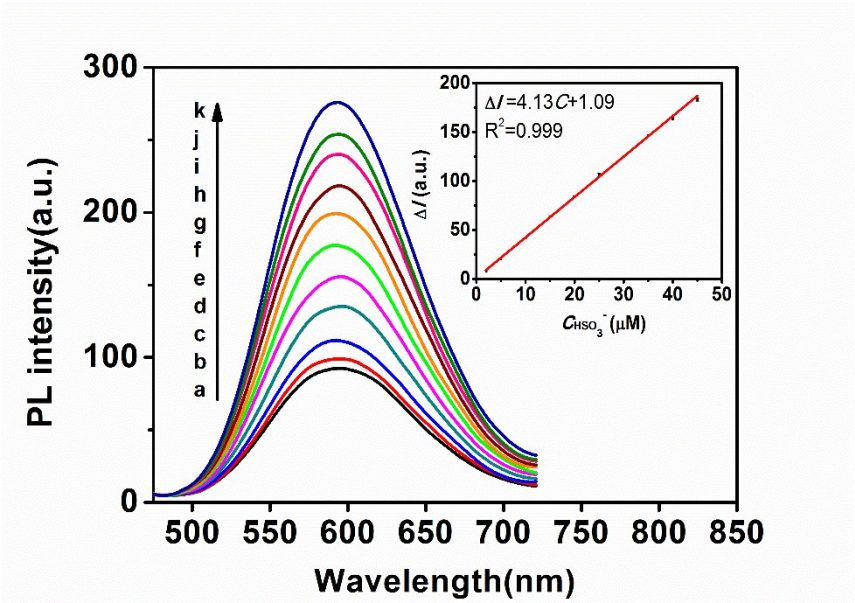

Fig. S5 PL emission spectra of 50 μM probe **1** reacting with varied concentrations of HSO_3^- (0, 2, 5, 10, 15, 20, 25, 30, 35, 40 and 45 μM) in the 10 mM HAc-NaAc buffer solution (pH=5.0). Insert, Linear calibration curve of HSO_3^-. λex=380 nm.

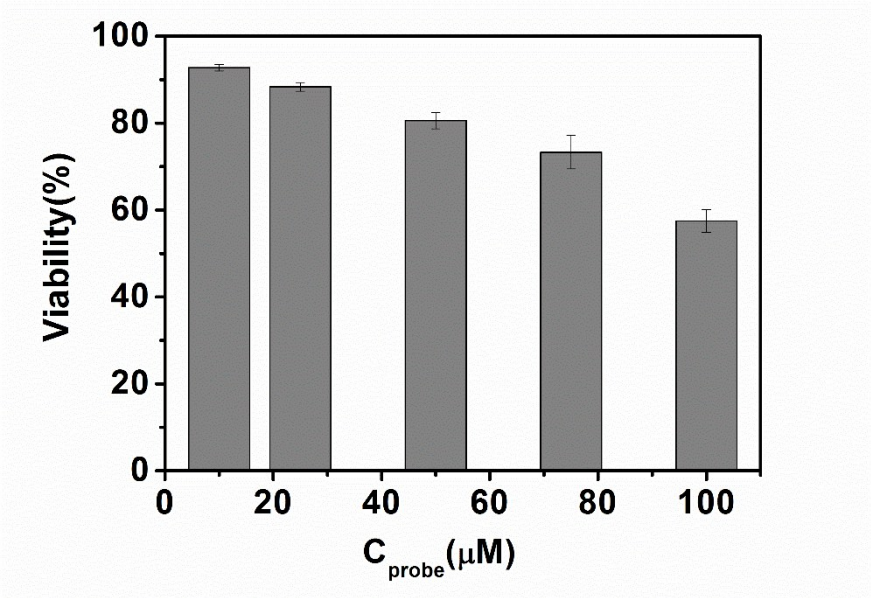

Fig. S6 Cell viability after treatment of MCF-7 cells with different concentration of probe **1** (10, 25, 50, 75 and100 μM).

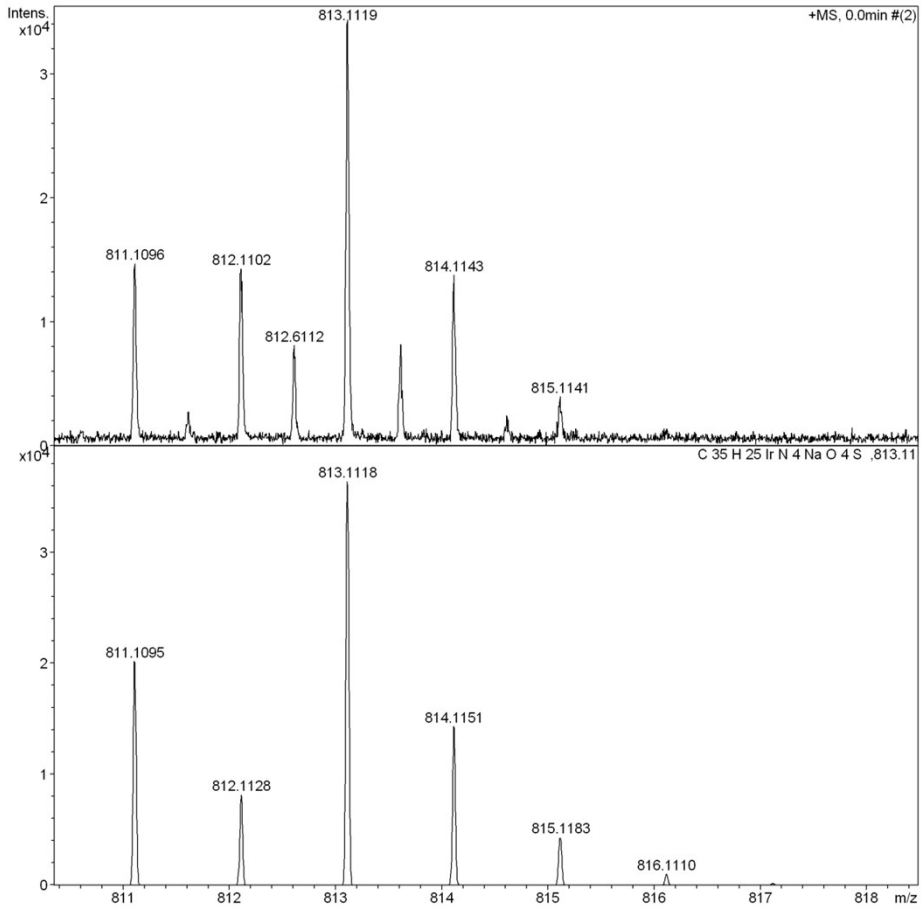

Fig. S7 Mass spectrum of formation of probe **1**-HSO_3^- adduct.

Table S1. Analytical results of HSO_3^-.

Method	Linear range	Detection limitation	Samples	Ref
Absorbance	0.1-10 mM	0.02 mM	/	1
Absorbance	/	1 μM	/	2
Fluorescence	0-40 μM	0.1 μM	granulated sugar	3
Fluorescence	1–50μM	0.89 μM	/	4
Fluorescence	0.524–215 μM	0.187 μM	granulated sugar	5
Fluorescence	/	2 μM	cell imaging	6
Fluorescence	0-15 μM	0.097 μM	sugar samples	7
Fluorescence	5-30 μM	1.76 μM	sugar samples	8
Fluorescence	0-80 μM	0.01 μM	sugar samples	9
Fluorescence	0-10 μM	0.1 μM	cell imaging	10
Fluorescence	0-30 μM	95 nM	cell imaging	11
Fluorescence	0.8-200 μM	0.37 μM	granulated sugar	12
Fluorescence	0-3 μM	27 nM	sugar samples fetal bovine serum cell imaging	13
Fluorescence	1-21 μM	0.053 μM	sugar samples fetal bovine serum cell imaging	14
Fluorescence	0-10 μM	5.6 nM	sugar samples	15
Fluorescence	2-45 μM 0.5-6 μM	0.3 μM	white wine cell imaging	This work

References

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