Electronic Supplementary Information

A novel ratiometric fluorescent probe for selective detection of bisulfite in living cells

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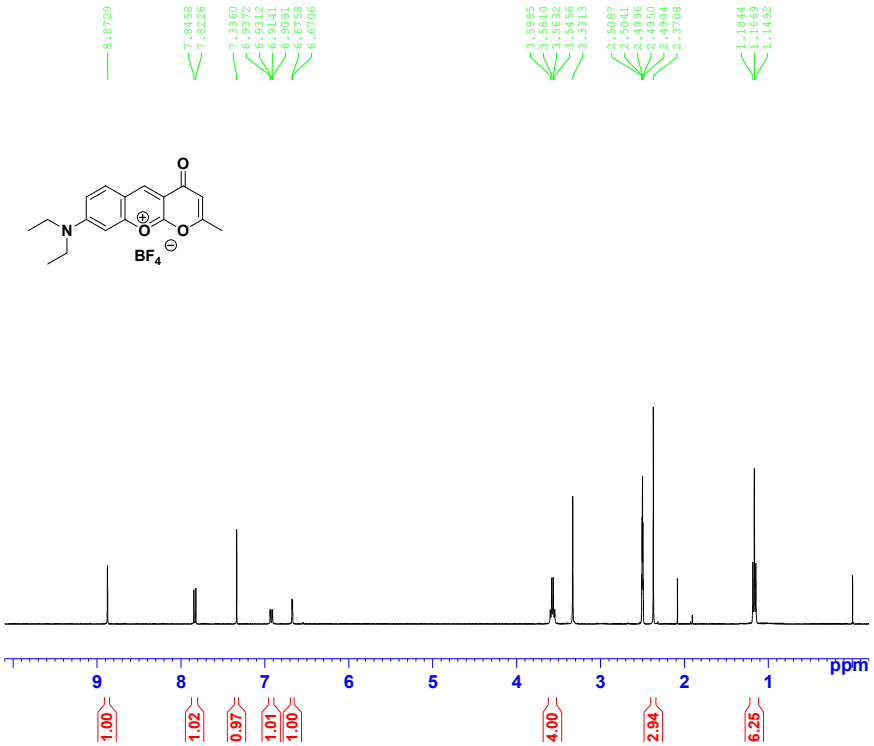
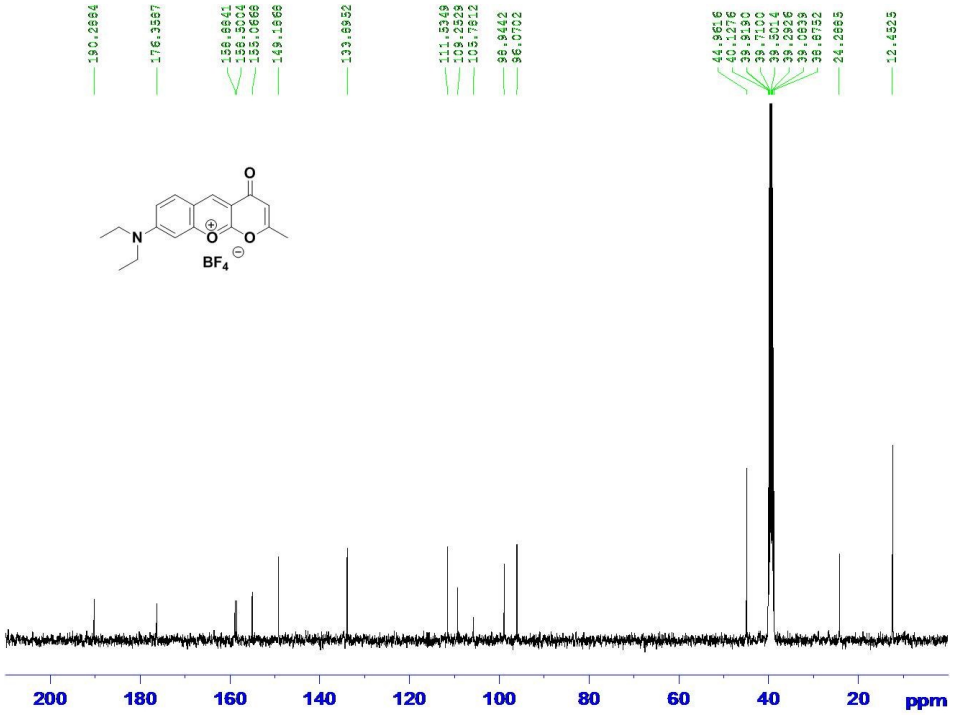
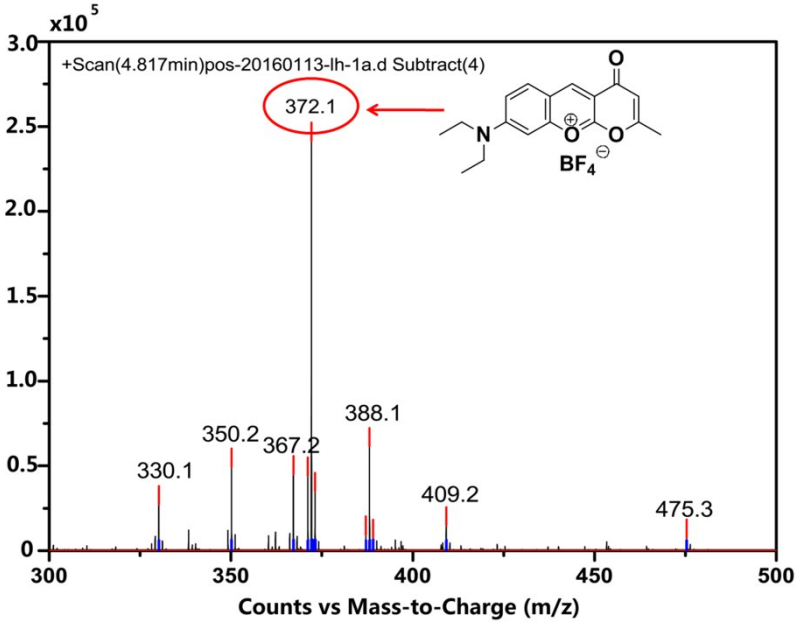
1. Structure characterizations for APCT



^{1}H NMR (400MHz) spectra of probe-APCT in d_6-DMSO



^{13}C NMR (400MHz) spectra of probe-APCT in d_6-DMSO



Mass spectrum of probe-APCT

2. Additional experiment data

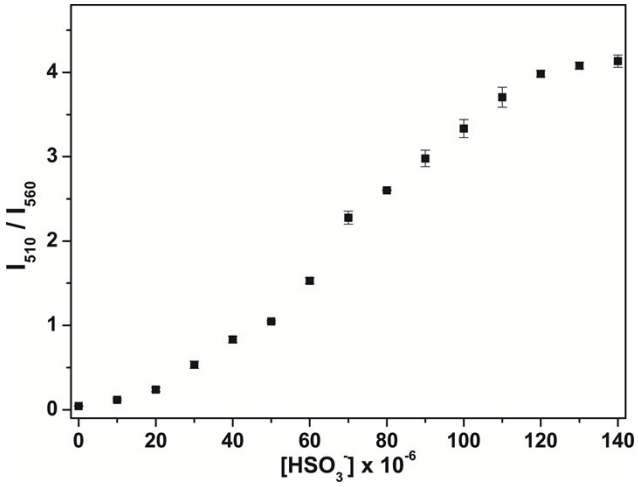


Fig.S1 The relationship between ratiometric responses (I_{510}/I_{560}) of probe-APCT (20 μM) and the concentration of HSO_3^-

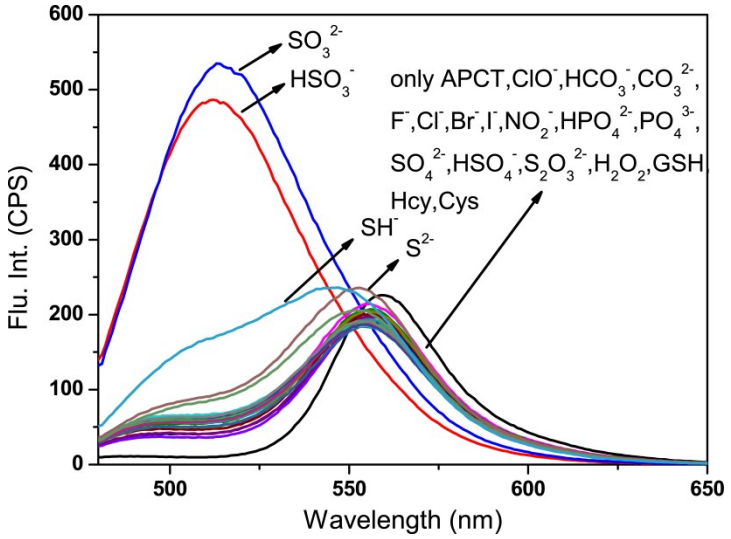


Fig.S2 Fluorescence spectra of probe-APCT (20 μM) upon addition of other physiological interfering species (6 equiv). All the data were performed after 5 min mixing in in pH=7.4 Tris buffer solution containing 70 % DMSO (v/v) at 25 ℃. λ_{ex} = 465 nm , slit width: $d_{ex} = d_{em}$ = 3 nm.

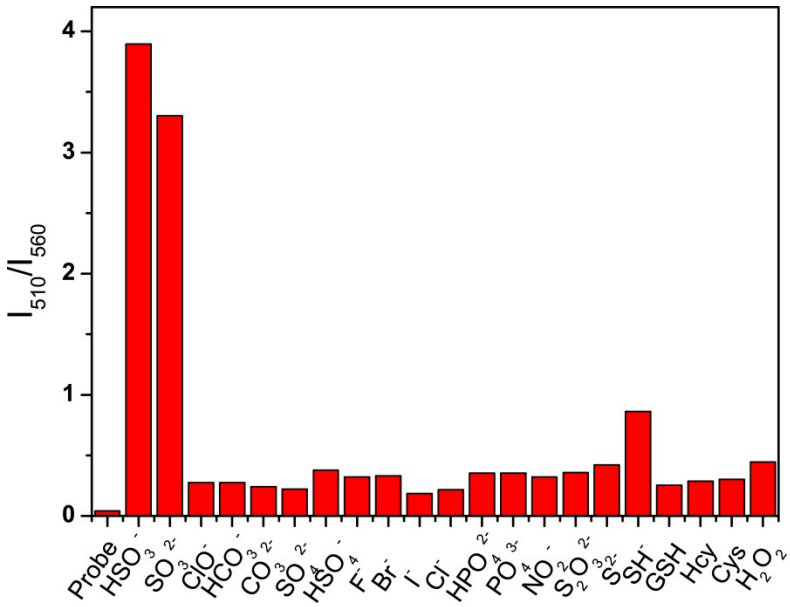


Fig.S3 Fluorescence intensity ratio (I_{510}/I_{560}) of probe-APCT (20 μM) toward 6 equiv interfering species in pH=7.4 Tris buffer solution containing 70 % DMSO (v/v) at 25 ℃. λ_{ex} = 465 nm , slit width: $d_{ex} = d_{em}$ = 3 nm.

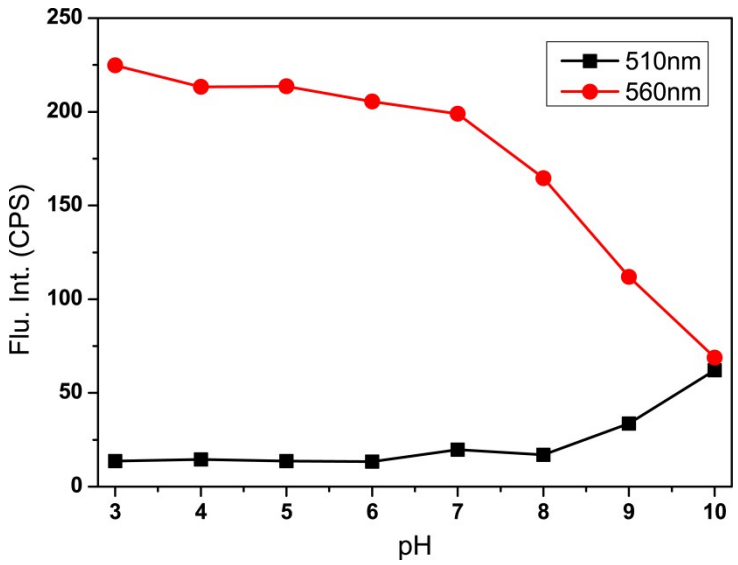


Fig.S4 The fluorescence intensities at 560 nm and 510 nm of probe-APCT (20 μM) at different pH values.

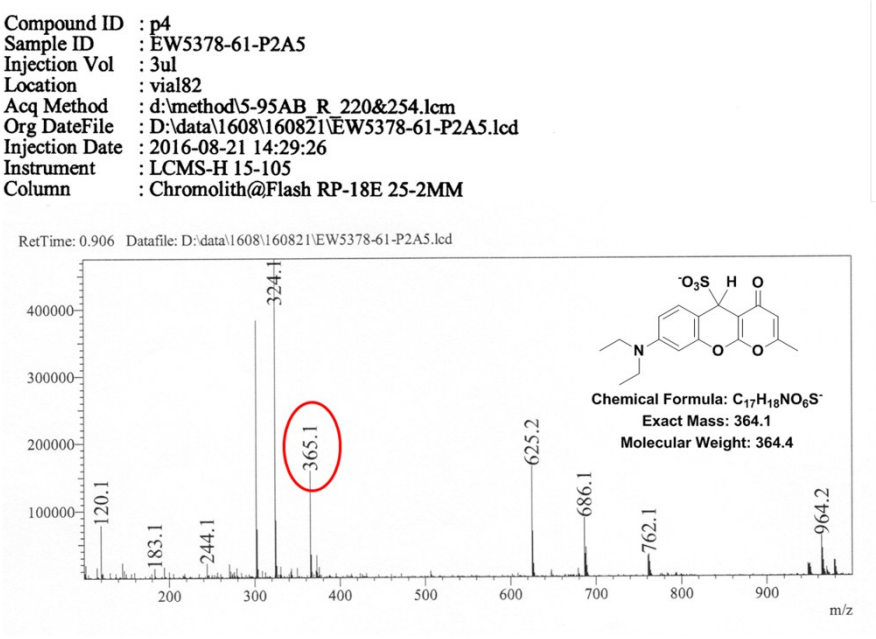


Fig.S5 MS of $[APCT+HSO_3^-]^+$ Calcd for $C_{17}H_{19}NO_6S$ 365.1, Found 365.1.

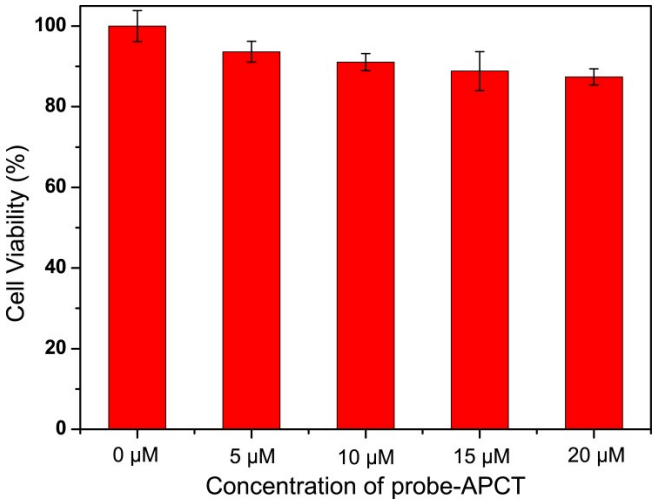
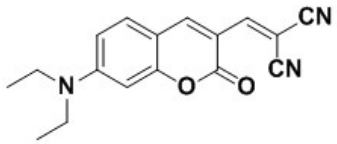
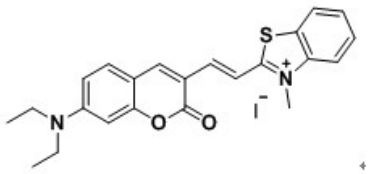
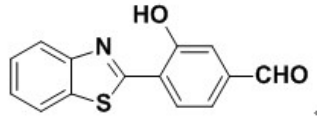
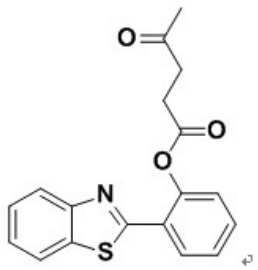
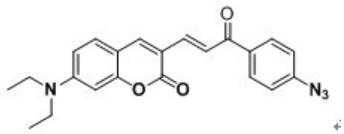
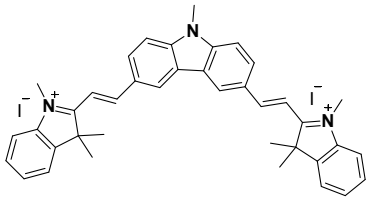
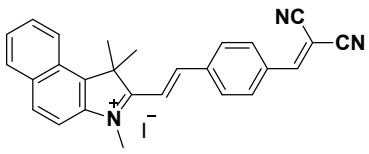
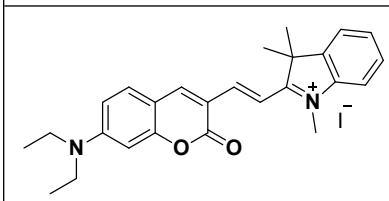
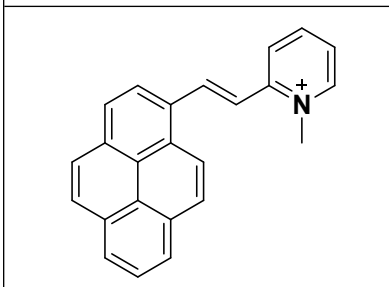
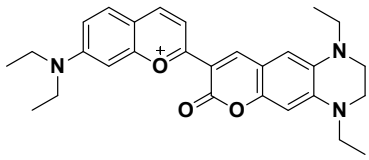
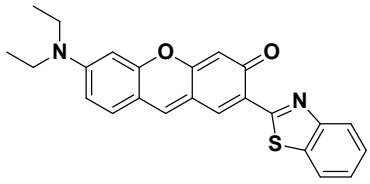
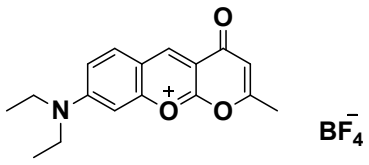


Fig.S6 Cytotoxicity of probe-APCT evaluated on HeLa cells by the standard CCK-8 assay. The cells were incubated with probe-APCT (0, 5, 10, 15 and 20 μM) for 12 h.

3. Table 1. Comparison of fluorescent probe for HSO_3^-

Probes	Response time	Linear range	Detection limit	Reference
	30 s	0-200 μM	5.8 x 10^{-5} M	Analyst, 2013, 138, 3018-3025.
	5 min	0-15 μM	3.8 x 10^{-7} M	Chem. Commun., 2013,49, 2637-2639
	Within Seconds	0-100 μM	3.3 x 10^{-7} M	Org. Biomol. Chem., 2015,13, 8663-8668
	60 min	0-320 μM	5 x 10^{-6} M	RSC Adv., 2012, 2, 10869-10873
	120 min	0-100 μM	1 x 10^{-7} M	Analyst, 2014, 139, 3373−3377.

	2 min	0-40 μM	3 x 10^{-5} M	RSC Adv., 2016, 6, 18662-18666.
	30 s	0-24 μM	1.5 x 10^{-7} M	RSC Adv., 2016,6, 79830-79835
	3 min	0.3-50 μM	9 x 10^{-8} M	Biomaterials. 2015, 56, 1-9.
	20 min	0-2.5 mM	6.9 x 10^{-7} M	Dyes. Pigments. 2015, 120, 322-327
	< 15 s	0.25-2 μM	8.3 x 10^{-9} M	Anal. Chem. 2015, 87, 609−616
	2 min	0-8 μM	2.2 x 10^{-7} M	Dyes. Pigments. 2015, 120, 213-219.
	5 min	20-120 μM	6.1 x 10^{-7} M	This work