Supporting Information

A highly selective AIEgen fluorescent probe for visualizing Cys in living cells and C. elegans

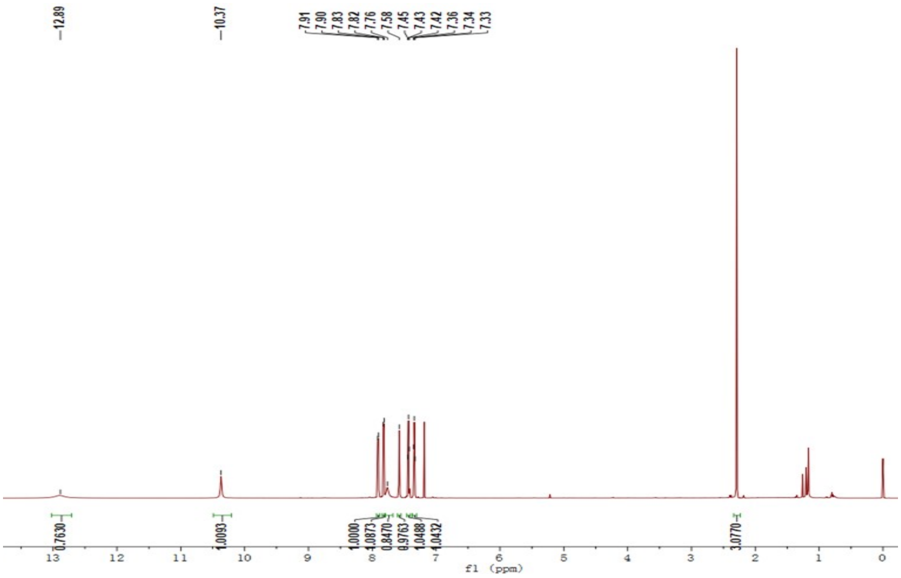


Figure S1. ^{1}H NMR spectra of **1** (DMSO-*d*6).

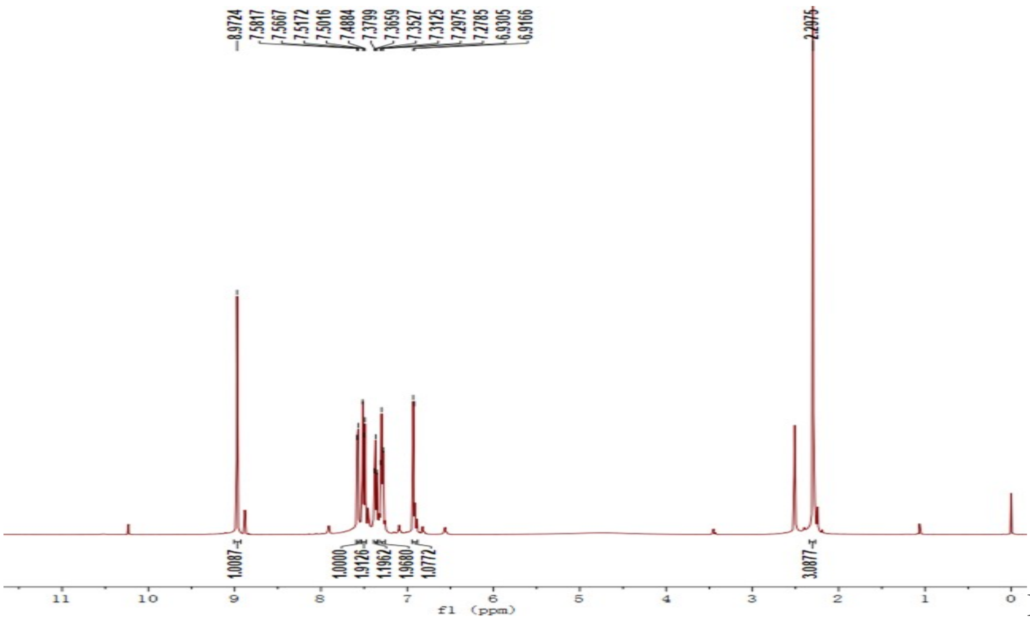


Figure S2. ^{1}H NMR spectra of **2** ($CDCl_3$).

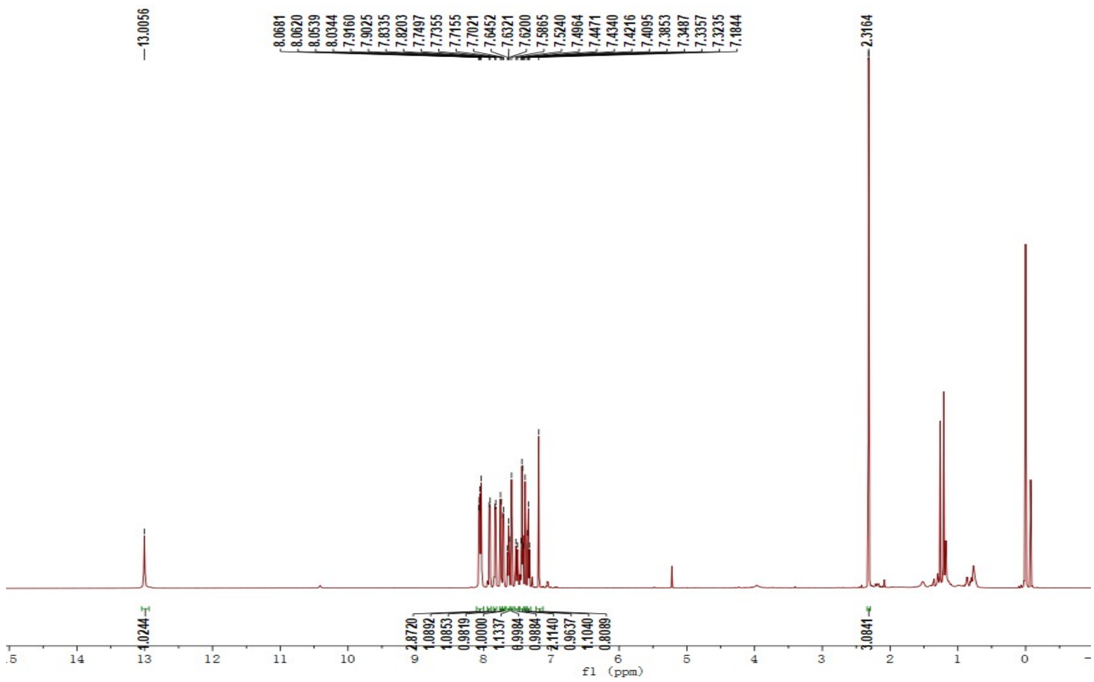


Figure S3. ^{1}H NMR spectra of **PE-OH** ($CDCl_3$).

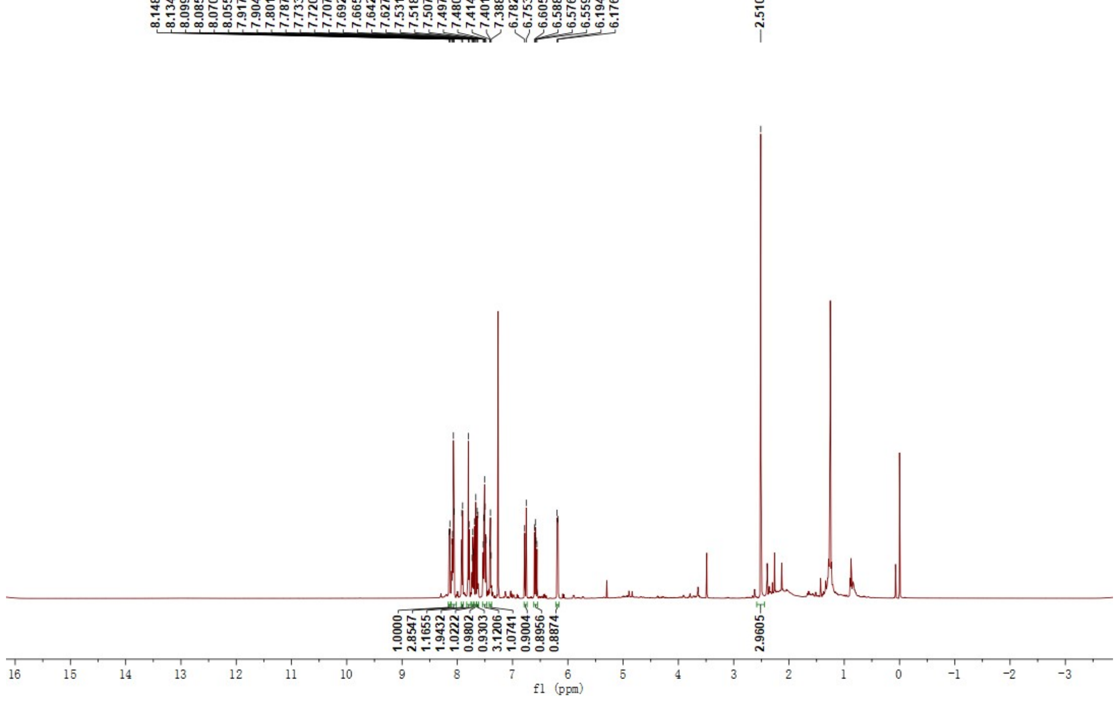


Figure S4. ^{1}H NMR spectra of **PE-YW** ($CDCl_3$).

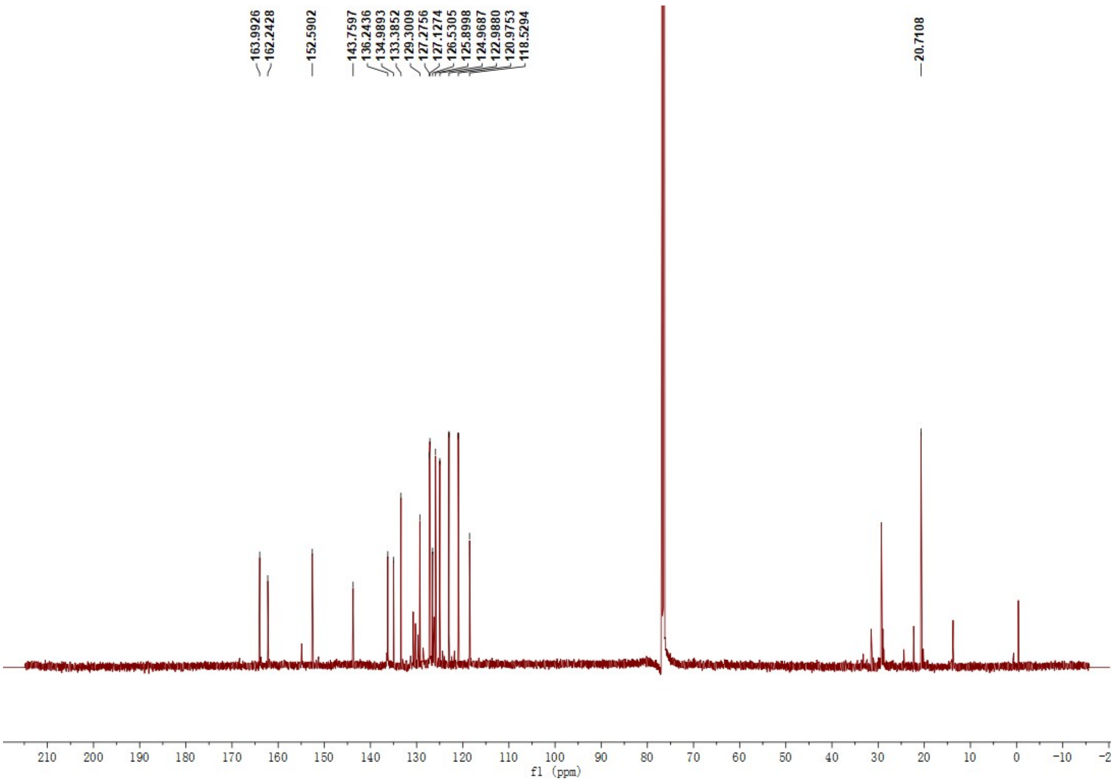


Figure S5. ^{13}C NMR spectra of **PE-YW** ($CDCl_3$).

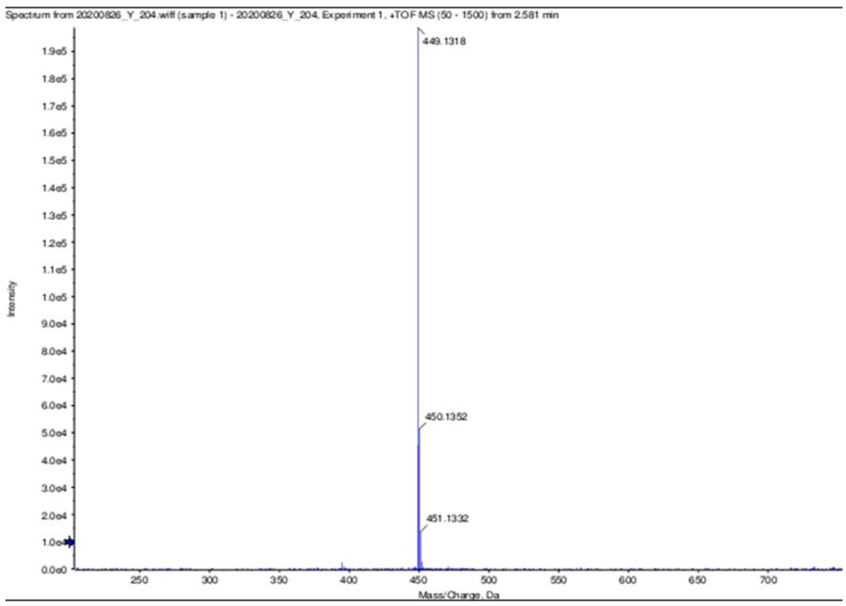


Figure S6**.** TOF-MS of **PE-YW** calculated for TOF-MS for $C_{28}H_{20}N_2O_2S$ $[M]^+$, 449.5; found, 449.1318

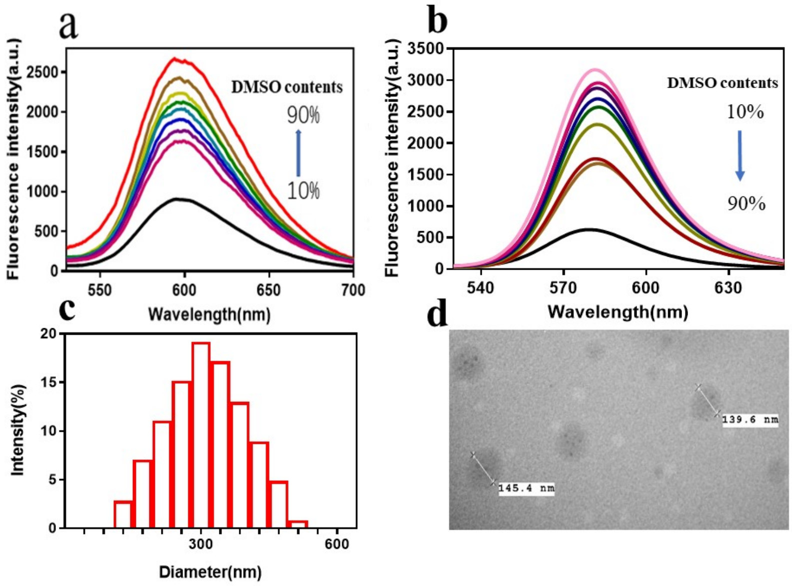


Figure S7**.** (a) Fluorescence spectra of **PE-OH** (10 μM) in PBS buffer at pH 7.4 containing different concentrations of DMSO; (b) Fluorescence spectra of Rhodamine B (10 μM) in PBS buffer at pH 7.4 containing different concentrations of DMSO; (c) the results of DLS; (d) the images of TEM.

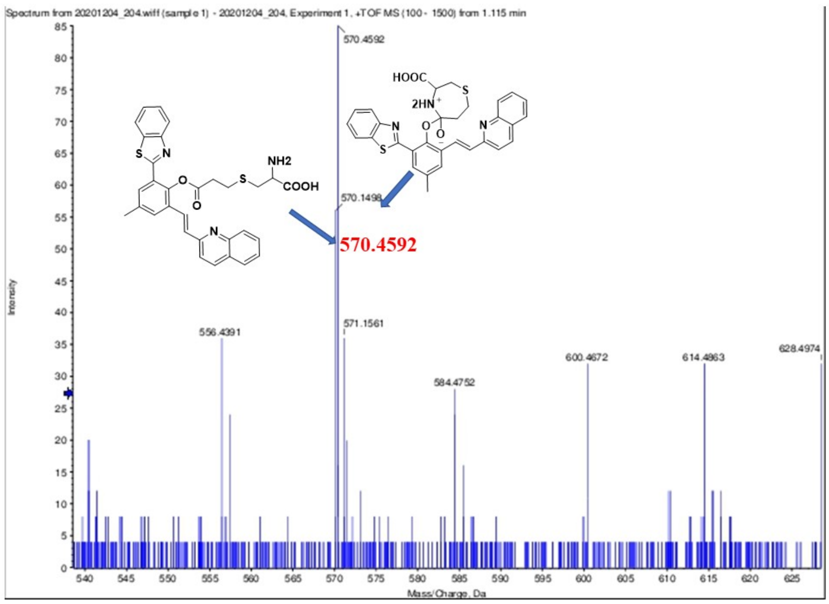


Figure S8**.** TOF-MS of **PE-YW-Cys-1 and PE-YW-Cys-2** after **PE-YW** treatment with Cys.

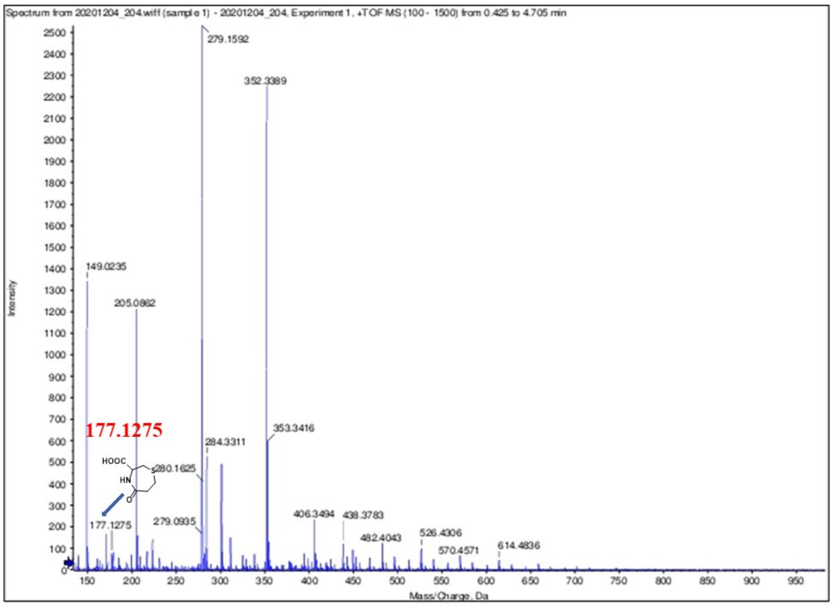


Figure S9. TOF-MS of **Cys-3** after **PE-YW** treatment with Cys.

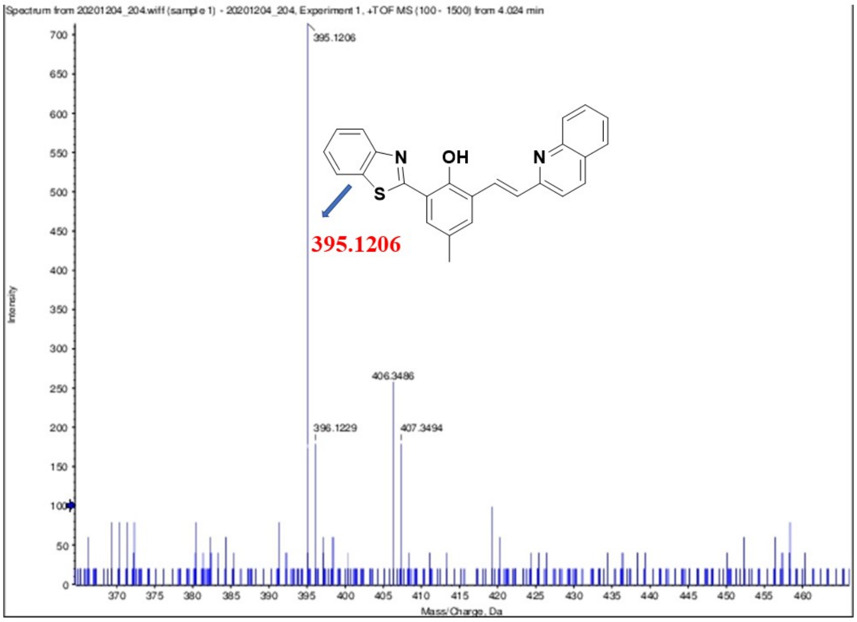
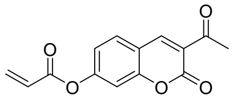
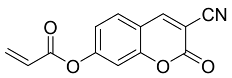
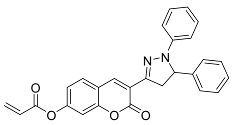
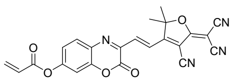
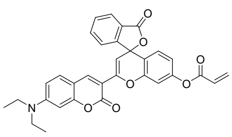
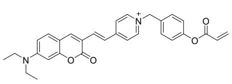
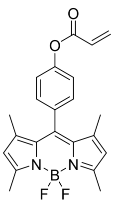
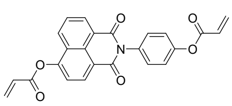
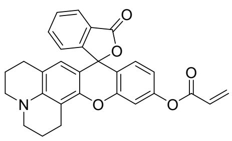
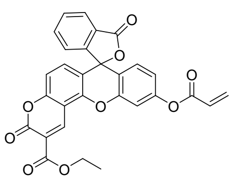
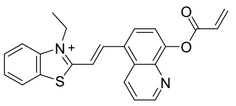
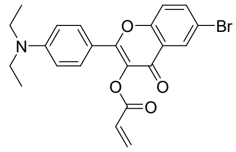
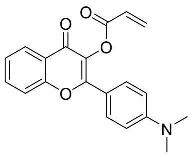
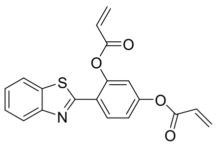
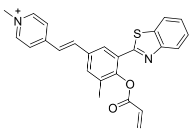
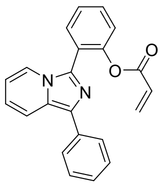
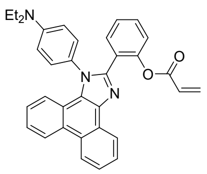
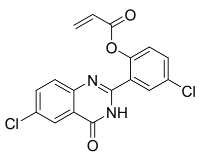
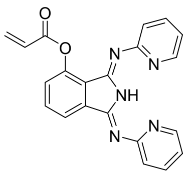
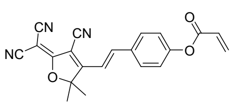
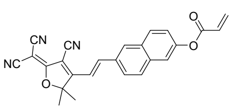
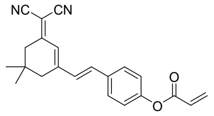
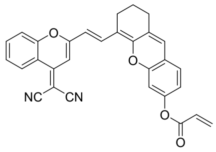
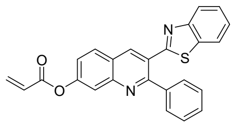
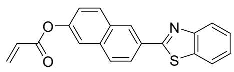
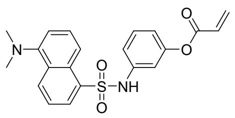
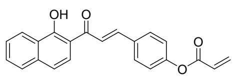
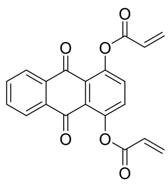
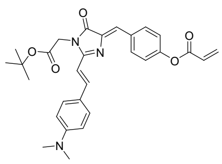
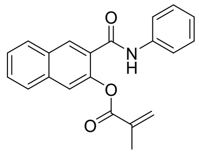
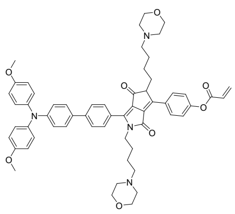
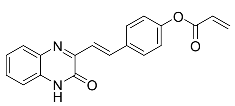
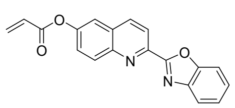


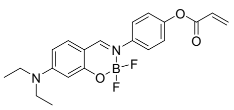
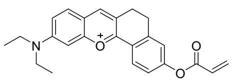
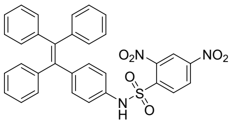
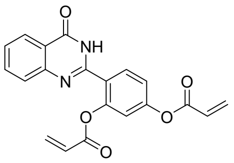
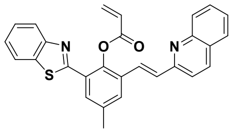
Figure S10. TOF-MS of **PE-OH** after **PE-YW** treatment with **Cys**

Table.1 The comparison of reported work with this work

Probe	AIE/ACQ	Ex/Em (nm)	δ	LOD	Time	Application	ref
	ACQ	λex=420 nm; λem=456 nm	0.841	0.657 μM	40 min	in buffer and living cells	[1]
	ACQ	λ_{ex} = 413 nm; λ_{em}=450 nm	/	80 nM	20 min	in buffer and living cells	[2]
	ACQ	λ_{ex}=430 nm; λ_{em}=560/460 nm	0.0235	5.08 μM	40 min	in buffer and living cells	[3]
	ACQ	λ_{ex}= 574 nm, λ_{em}=675 nm	0.031	0.2 μM	10 min	in buffer and living cells	[4]
	ACQ	λ_{ex}= 450 nm, λ_{em}=650/525 nm	/	0.67 μM, 0.76 μM	10 min	in buffer and living cells	[5]
	ACQ	λ_{ex}= 500 nm, λ_{em}=539/644 nm	0.84	46.7 nM	30 min	in buffer and living cells	[6]
	ACQ	λ_{ex}= 480 nm, λ_{em}=517 nm	/	0.05 μM	< 5 min	in buffer and living cells	[7]
	ACQ	λ_{ex}= 391 nm, λ_{em}=559 nm	/	0.12 μM	< 10 min	in buffer and living cells	[8]
	ACQ	λ_{ex}= 538 nm, λ_{em}=567 nm	/	39.2 nM	14 min	in buffer and living cells	[9]
	ACQ	λ_{ex}= 450 nm, λ_{em}=540 nm; λ_{ex}= 332 nm, λ_{em}=540/472 nm;	0.020	0.084 μM	10 min	in buffer and living cells	[10]

	ACQ	λ_{ex}= 570nm, λ_{em}=591 nm	/	8.5 nM	100 s	in buffer and living cells	11
	ACQ	λ_{ex}=420nm, λ_{em}=568 nm	/	4.06 nM	5 min	in buffer and living cells and living zebrafish	12
	ACQ	λ_{ex}=417nm, λ_{em}=550 nm	0.025	0.2 μM	5 min	in buffer and living cells	13
	ACQ	λ_{ex}=333nm, λ_{em}=446 nm	0.025	0.8 μM	30 min	in buffer and living cells	14
	ACQ	λ_{ex}=397nm, λ_{em}=607 nm	/	0.12 μM	80 min	in buffer and living cells	15
	ACQ	λ_{ex}=340nm, λ_{em}=475nm	0.254	0.07 μM	10 min	in buffer and living cells	16
	ACQ	λ_{ex}=360nm, λ_{em}=465nm	/	0.64 μM	10 min	in buffer and living cells	17
	ACQ	λ_{ex}=360nm, λ_{em}=520nm	/	0.1 μM	5 min	in buffer and living cells	18
	ACQ	λ_{ex}=368nm, λ_{em}=585nm	/	5.4 nM	20 min	in buffer and living cells	19
	ACQ	λ_{ex}=580nm, λ_{em}=620nm	/	0.24 μM	60 min	in buffer and living cells	20
	ACQ	λ_{ex}=480nm, λ_{em}=650nm	/	12.4 nM	5 min	in buffer and living cells	21

	ACQ	λ_{ex}=557nm, λ_{em}=673nm	/	0.16 μM	/	in buffer and living cells	22
	ACQ	λ_{ex}=600nm, λ_{em}=760nm	/	48 nM	5 min	in buffer, living cells and mouse	23
	ACQ	λ_{ex}=410nm, λ_{em}=506nm	/	0.39 μM	12 min	in buffer and living cells	24
	ACQ	λ_{ex}=400nm, λ_{em}=525nm	/	14.8 nM	40 min	in buffer and living cells	25
	ACQ	λ_{ex}=380nm, λ_{em}=545nm	/	13 nM	/	in buffer and living cells	26
	ACQ	λ_{ex}=425nm, λ_{em}=495/620nm	/	91 nM	10 min	in buffer and living cells	27
	ACQ	λ_{ex}=470nm, λ_{em}=565nm	/	0.158 μM	90 min	in buffer and living cells	28
	ACQ	λ_{ex}=493nm, λ_{em}=620nm	0.3	18.7 μM	30 min	in buffer and living cells	29
	ACQ	λ_{ex}=400nm, λ_{em}=530nm	/	0.5 μM	50 min	in buffer and living cells	30
	ACQ	λ_{ex}=510nm, λ_{em}=552/664nm	/	84 nM	100 min	in buffer and living cells	31
	ACQ	λ_{ex}=403nm, λ_{em}=537/467nm	0.54	/	120 min	in buffer and living cells	32
	ACQ	λ_{ex}=360nm, λ_{em}=383/518nm	0.58	0.59 μM	30 min	in buffer and living cells	33

	ACQ	λ_{ex}=405nm, λ_{em}=461/474nm	/	95.1 nM	9 min	in buffer and living cells	34
	ACQ	λ_{ex}=570nm, λ_{em}=615nm	/	0.12 μM	30 min	in buffer and living cells	35
	AIE	λ_{ex}=341nm, λ_{em}=490nm	/	0.18 μM	30 min	in buffer and living cells	36
	AIE	λ_{ex}=333nm, λ_{em}=495nm	/	0.03 μM	15 min	in buffer and living cells	37
	AIE	λ_{ex}=478nm, λ_{em}=576nm	0.8	1.72 nM	20 min	in buffer, living cells and *C.elegans*	This work

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