Supporting Information

A phenanthridine-based probe for selective detection of hypochlorite ion

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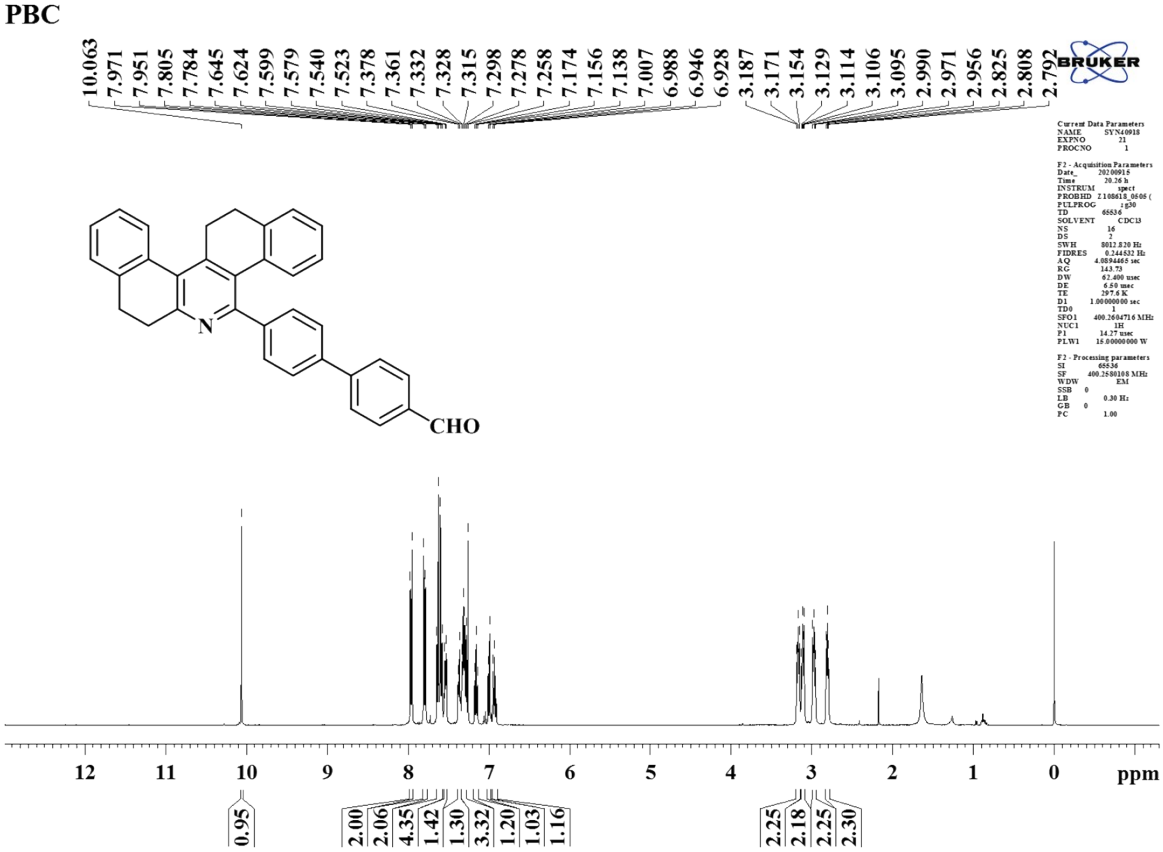
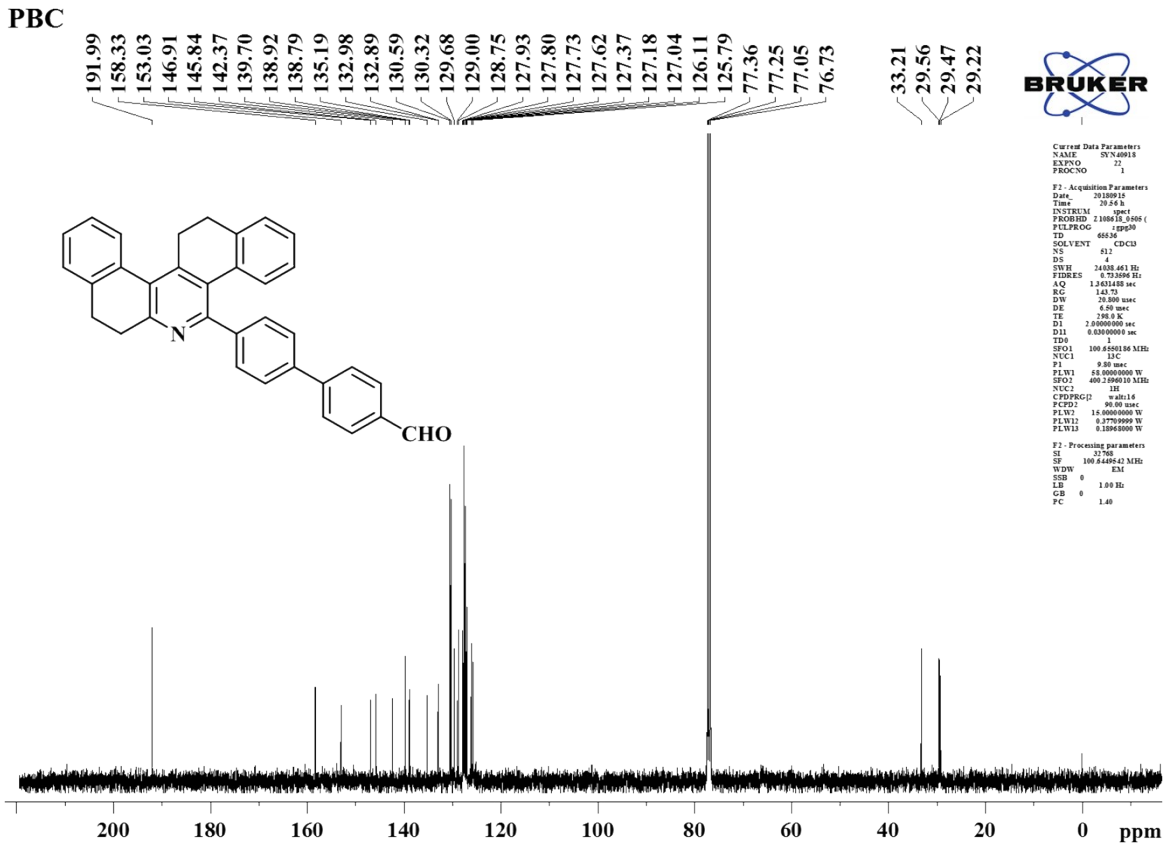
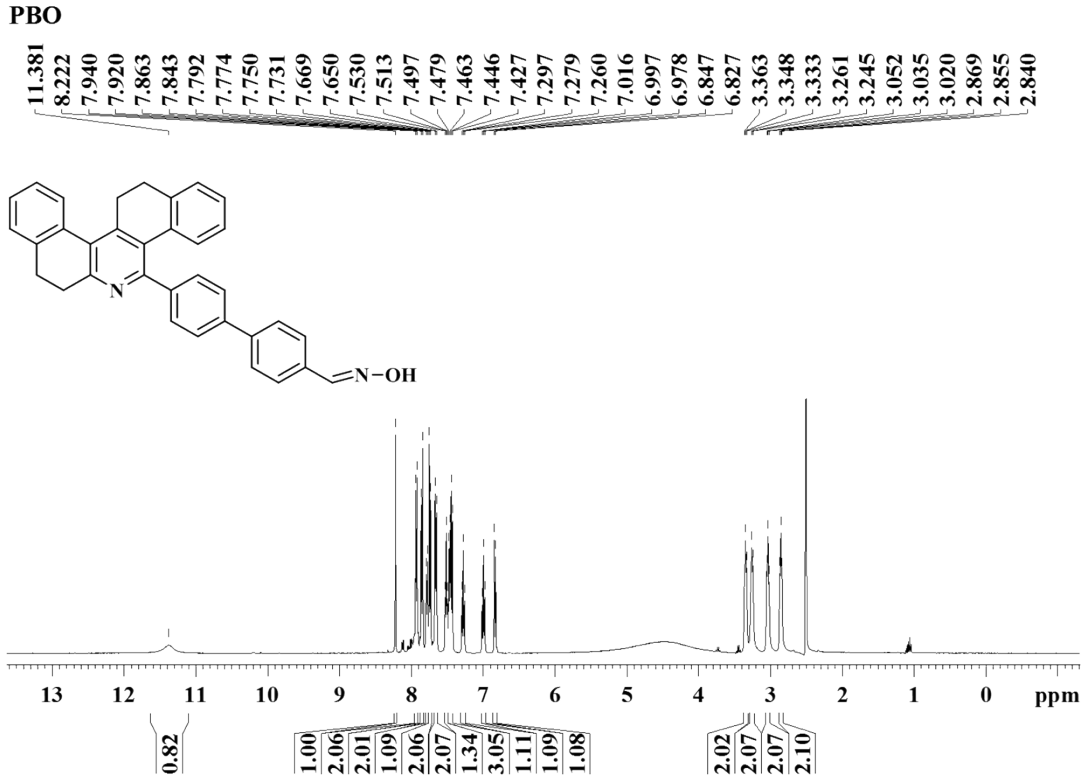


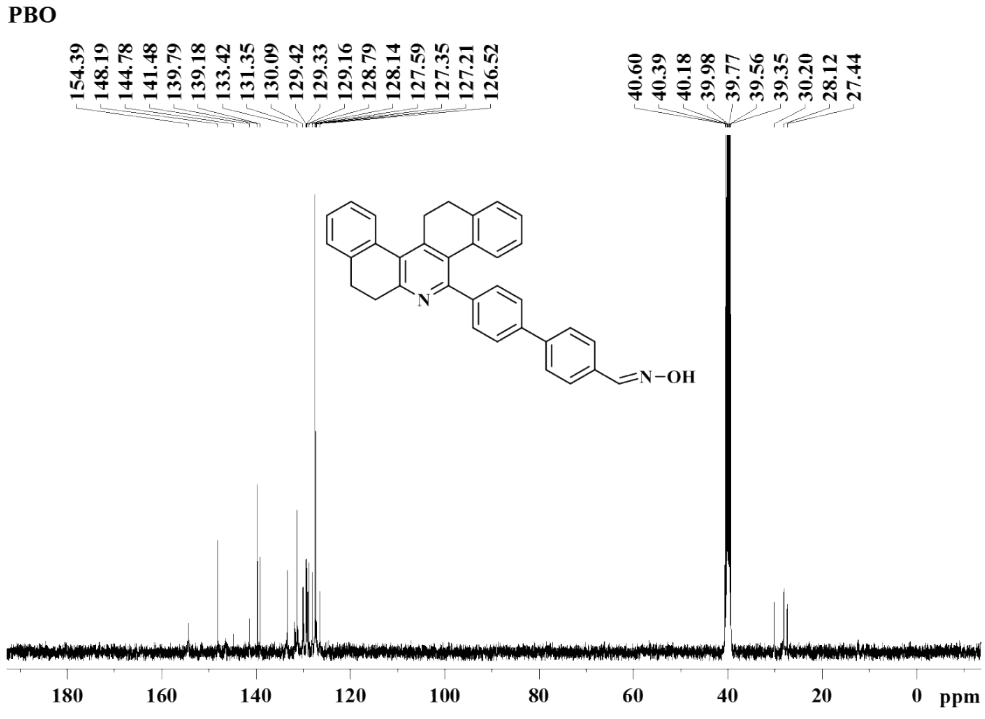
SI Figure S1 ^{1}H NMR spectra of **PBC**



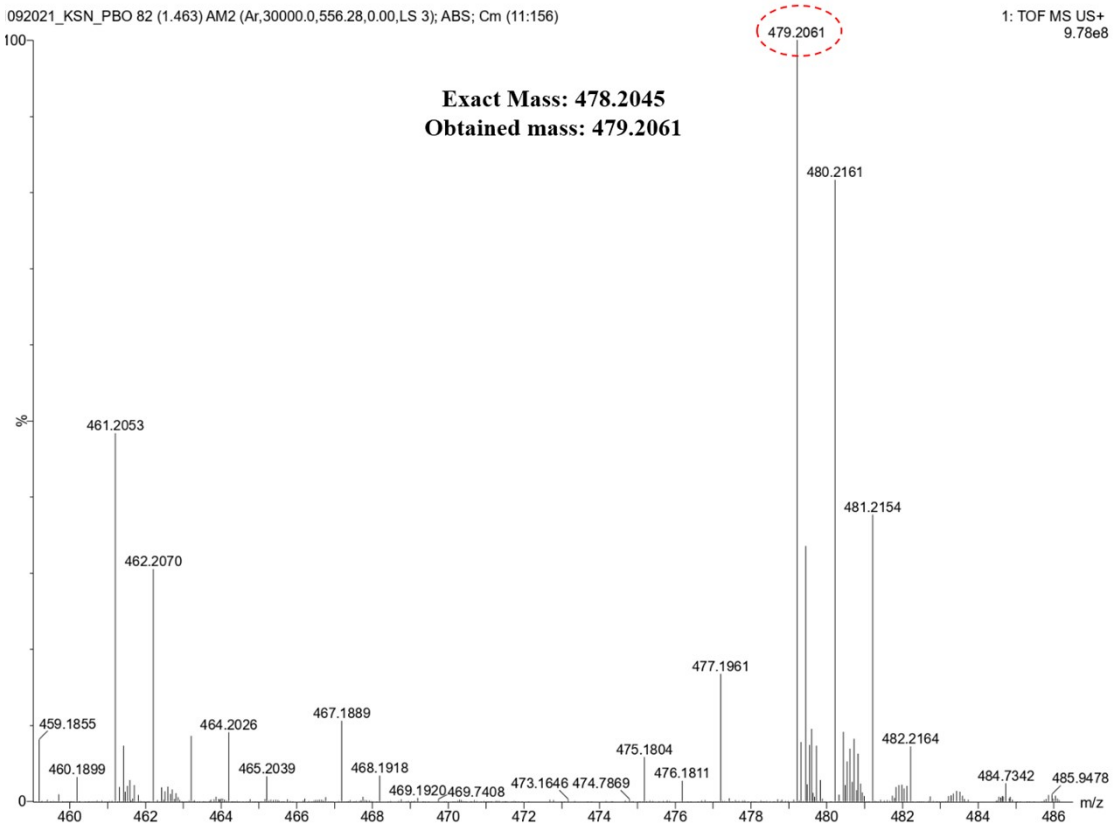
SI Figure S2 ^{13}C NMR spectra of **PBC**



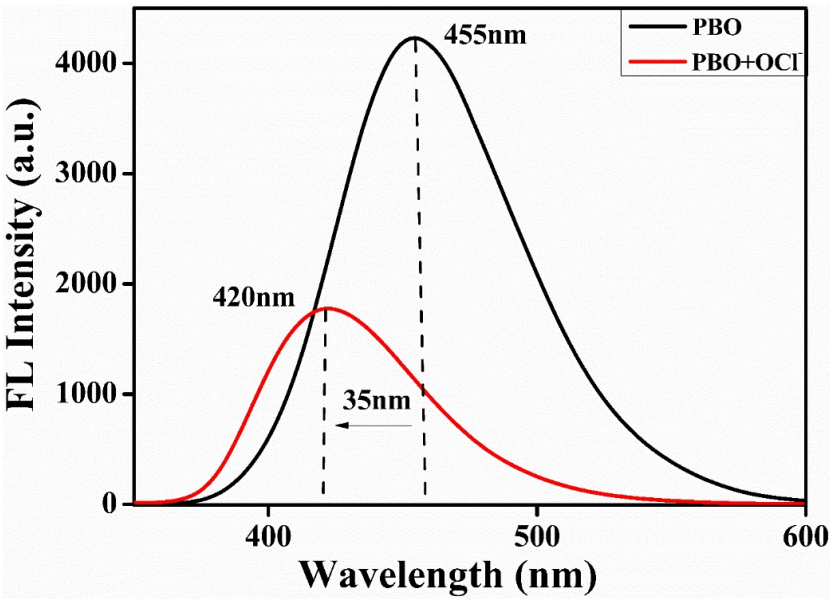
SI Figure S3 ^{1}H NMR spectra of **PBO**



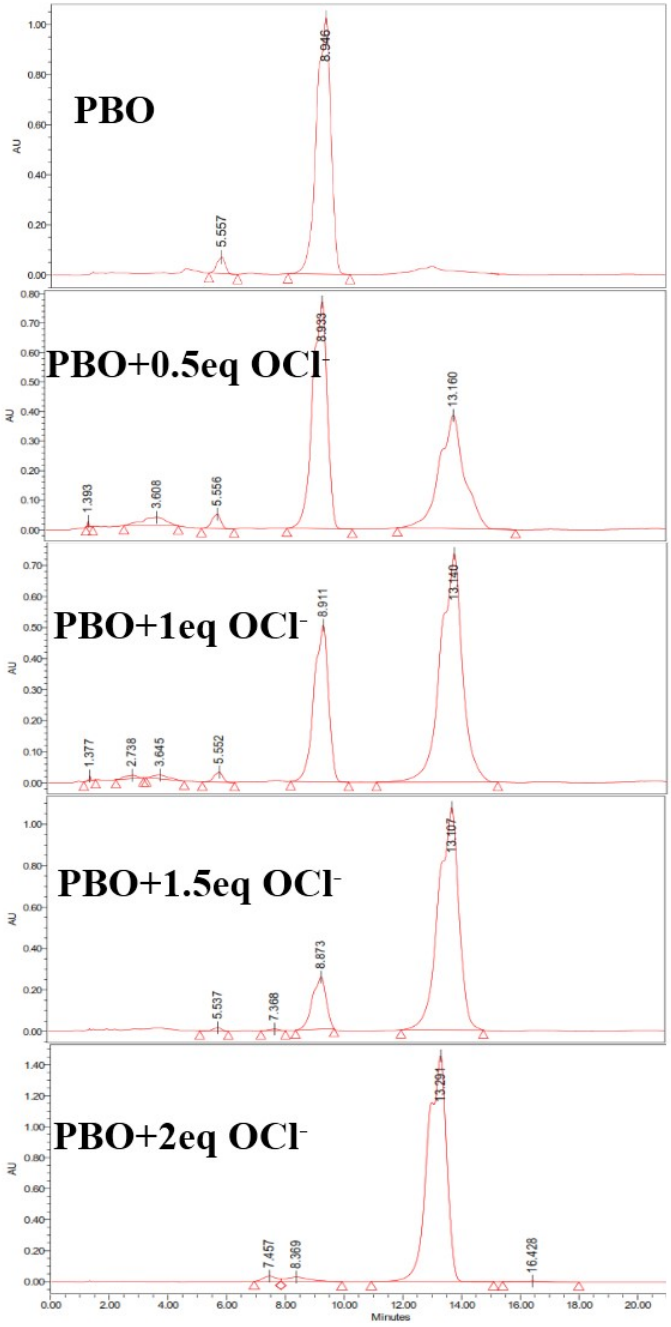
SI Figure S4 ^{13}C NMR spectrum of **PBO**



SI Figure S5 HRMS spectra of **PBO**



SI Figure S6 Emission spectrum of **PBO** with OCl^- ion



Peak Results

	Name	RT	Area	Height	Amount	% Area
1		5.557	1219774	65671		3.00
2		8.946	33378729	1024785		97.00

Peak Results

	Name	RT	Area	Height	Amount	% Area
1		1.393	50819	18927		0.10
2		3.608	1551543	28301		3.15
3		5.556	970074	49451		1.97
4		8.933	25221322	768342		51.16
5		13.160	21502574	383585		43.62

Peak Results

	Name	RT	Area	Height	Amount	% Area
1		1.377	57760	15216		0.11
2		2.738	292135	10264		0.54
3		3.645	432525	12054		0.80
4		5.552	643639	32624		1.19
5		8.911	16396591	504798		30.23
6		13.140	36425321	736781		67.15

Peak Results

	Name	RT	Area	Height	Amount	% Area
1		5.537	325992	16741		0.57
2		7.368	207309	8870		0.36
3		8.873	7715299	251162		13.37
4		13.107	49435910	1075284		85.70

Peak Results

	Name	RT	Area	Height	Amount	% Area
1		7.457	1031288	33067		1.52
2		8.369	1569166	27349		1.31
3		13.291	65094793	1455528		96.78
4		16.428	267111	5450		0.39

HPLC method details

HPLC model = Acquity – H class UPLC

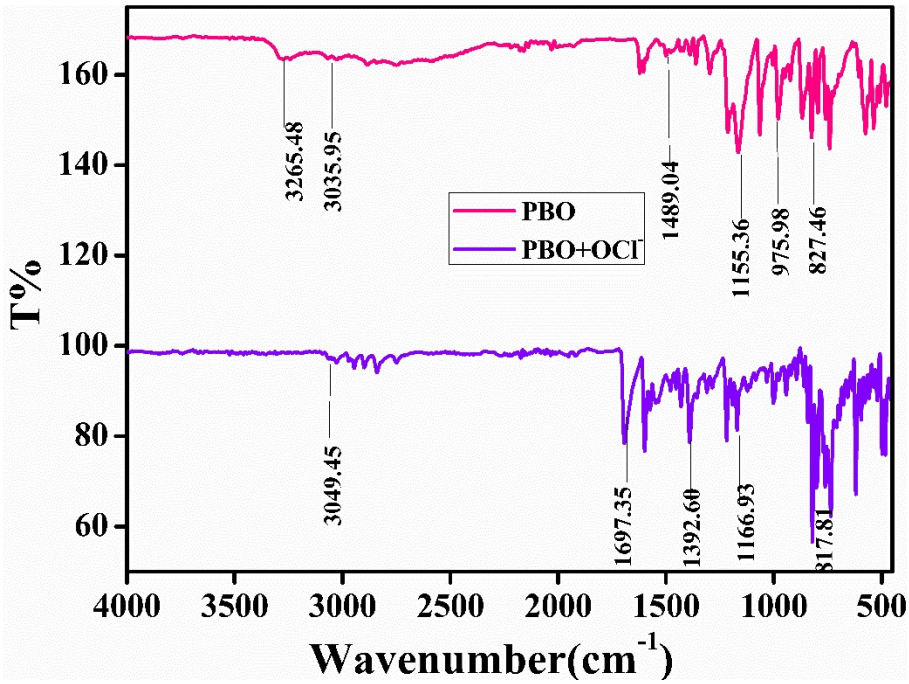
Column = Reverse phase Hypersil C18 - 5mm (particle size) and 150mm length

PDA-detector range 190-600nm

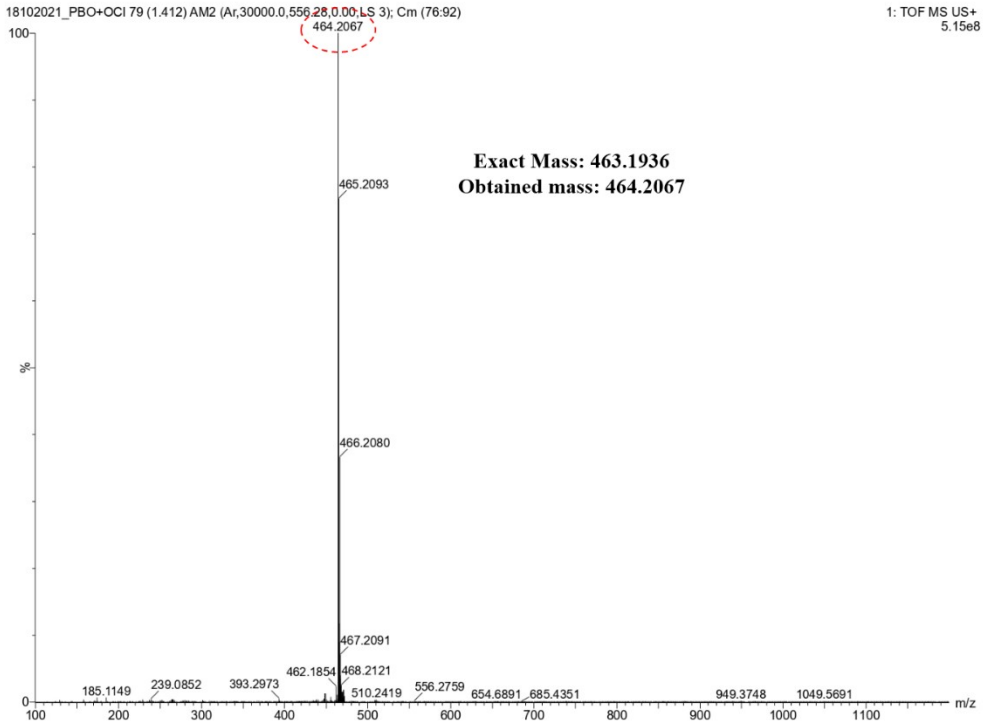
Moblie phase = Isocratic [Acetonitrie: H2O (9:1)]

Run time = 20 min

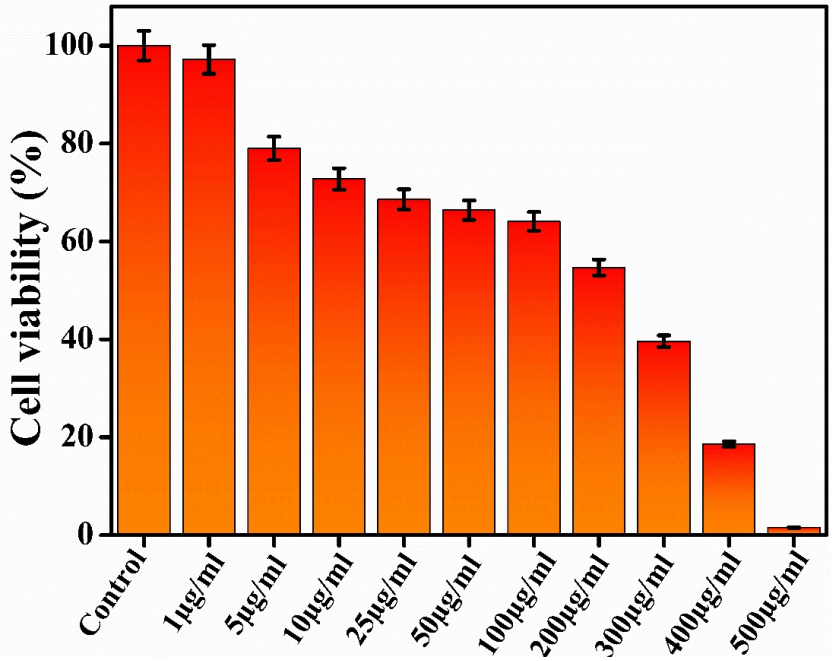
SI Figure S7 HPLC based reaction tracking of **PBO** with **OCl^-**.



SI Figure S8 FTIR spectra changes of **PBO** upon the addition of **OCl**$^{-}$ ion

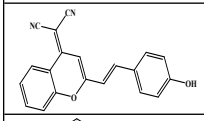
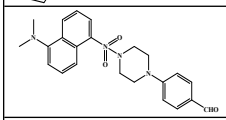
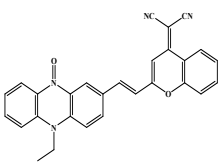
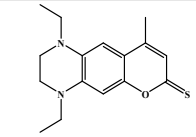


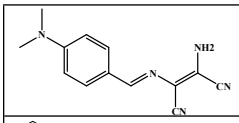
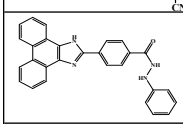
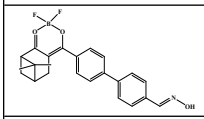
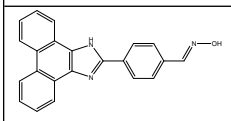
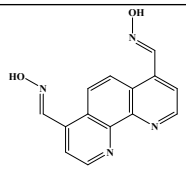
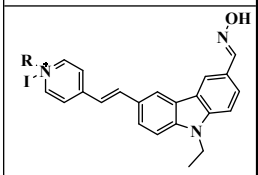
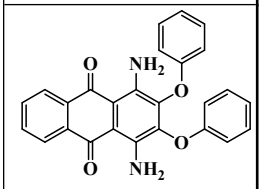
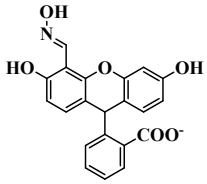
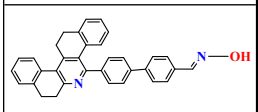
SI Figure S9 HRMS spectra of **PBO + OCl**$^{-}$ ion



SI Figure S10 Cytotoxicity of **PBO**

SI Table S1 the comparison table of probe **PBO** for detection of OCl^- ion in previous and present reports

Name of the sensor probe	Solvent/supported systems	Method used	Detection limit	Application	References
	EtOH: H2O ¼ 1:1	Fluorescence	80 nM.	Cell imaging	Analytica Chimica Acta 1078 (2019) 135e141
	DMF: PBS (5: 5, V/V]	Fluorescence	1.9 μM	Cell imaging	Sensors and Actuators B 255 (2018) 666–671
	HOCL (0–30 _M) in PBS buffer (PH 7.4, containing 50% EtOH as a co solvent).	Fluorescence	0.72 μM	Cell imaging	Sensors and Actuators B 255 (2018) 963–969
	PBS buffer (10.0 MM, PH = 7.4) containing 20% EtOH	Fluorescence	1.7 μM	Cell imaging	Sensors and Actuators B 260 (2018) 146–155

	DMSO–water solution	Fluorescence	0.5 μM	Cell imaging	Sensors and Actuators B 265 (2018) 365–370
	DMF–PBS buffer (10 mM, pH ¼ 7.4, 1: 1, v/v)	Fluorescence	0.58 μM.	Cell imaging	Anal. Methods, 2017, 9, 864
	DMF/PBS solution (v/v = 3/7, pH = 7.4	Fluorescence	0.136 μM	Cell imaging	Analyst, 2019, DOI: 10.1039/c9an01981b
	potassium phosphate buffer, pH 9.0/DMF	Fluorescence		Cell imaging	Chem. Eur. J. 2009, 15, 2305 – 2309
	0.1 M Na_2CO_3-$NaHCO_3$ buffer-DMF solution (30:1 v/v, pH = 9.0, rt.,	Fluorescence	5×10^{-5}M	Cell imaging	JFluoresc DOI 10.1007/s10895-015-1734-7
	PBS buffer (pH 7.4, 20mM, containing 0.5% DMSO)	Fluorescence	0.79μM	Cell imaging	Sensors and Actuators B: Chemical (2015), doi. 10.1016/j.snb.2015.08.098
	H3CN–HEPES buffer (Ph =7, v/v=1: 1)	Fluorescence		Cell imaging	RSC Adv., 2014,4, 44610–44613 DOI: 10.1039/c4ra06435f
	DMSO–H_2O solution (1: 9, v/v, 10 mM HEPES, pH 7.05)	Fluorescence		Cell imaging	Chem. Commun., 2011, 47, 11978–11980 DOI: 10.1039/c1cc15214a
	Acetonitrile: water 9:1	Fluorescence	8 nM	Cell imaging	Present work

SI Table S2 HOMO, LUMO energy level of PBO and PBO+OCl-

Fluorophore	Homo(eV)	Lumo(eV)	Energy gap(ΔE)
PBO	4.60	1.91	2.69
PBO+OCl$^-$	6.03	2.40	3.63

SI Table S3 Cell viability (%) (in triplicates) of PBO.

S. No	Tested sample concentration (µg/ml)	Cell viability (%) (in triplicates)			Mean Value (%)
1.	Control	100	100	100	100
2.	500 µg/ml	1.74129	1.64884	1.31485	1.5683297
3.	400 µg/ml	18.2587	20.6774	16.8443	18.593473
4.	300 µg/ml	39.1045	42.9144	36.8515	39.623458
5.	200 µg/ml	54.6269	57.9323	51.4925	54.683889
6.	100 µg/ml	72.9353	65.6417	53.6958	64.090947
7.	50µg/ml	75.5224	68.6275	55.0107	66.386833
8.	25 µg/ml	77.6119	70.7665	57.3916	68.590014
9.	10 µg/ml	81.0945	75.5348	61.7271	72.785455
10.	5 µg/ml	87.6119	80.8378	68.6567	79.035482
11.	1 µg/ml	97.6119	101.604	92.3241	97.180104