Electronic Supporting Information

A Pyrene Induced PET Based Chemosensor for Biologically Important Zn(II) ion: Application for Test Strips and Live Cell Imaging Studies

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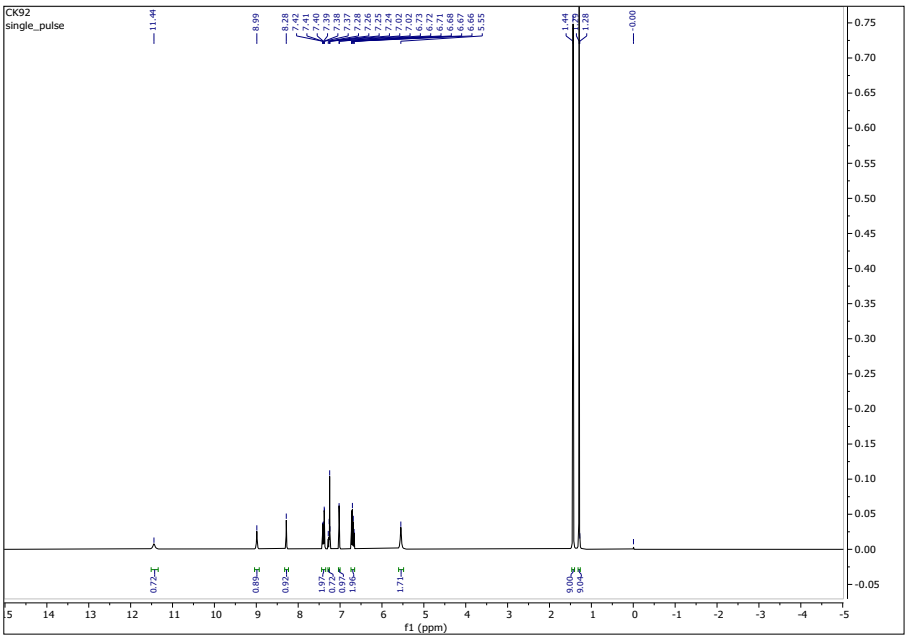


Fig. S1^{1}H-NMR spectra of DTH.

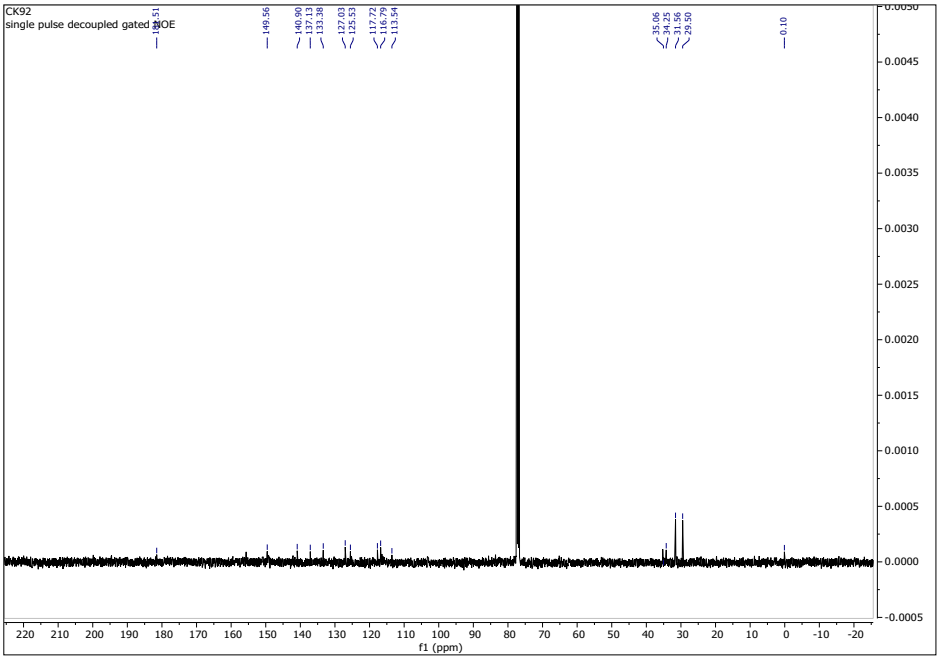


Fig. S2 ^{13}C-NMR spectra of DTH.

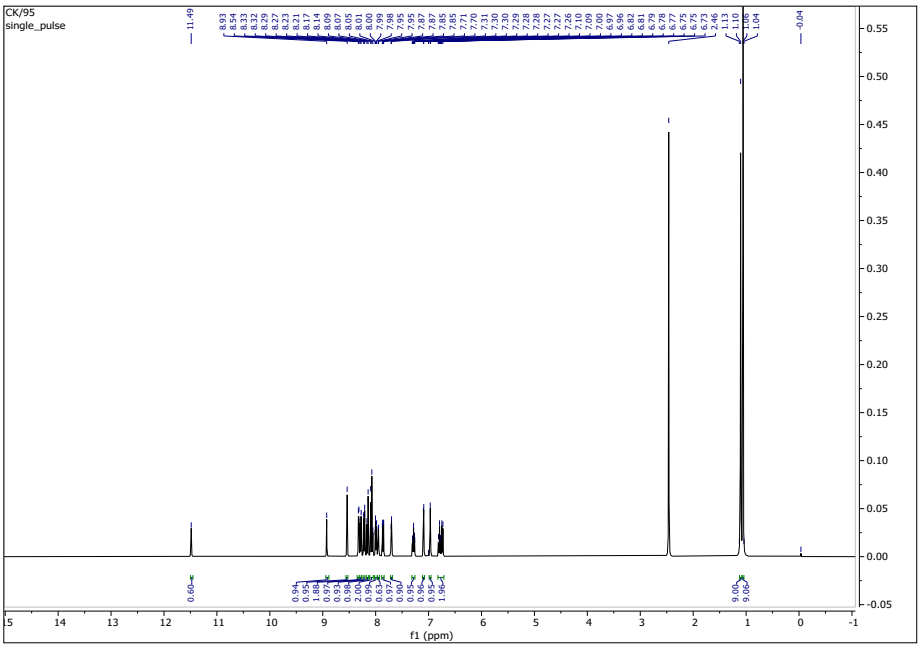


Fig. S3 ^{1}H-NMR spectra of DTQ.

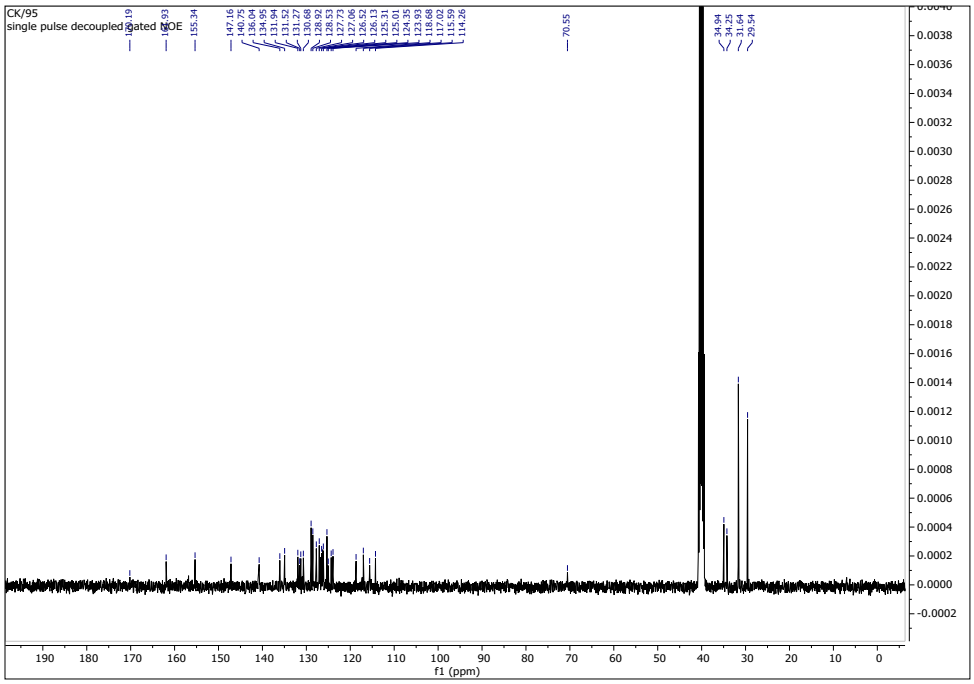


Fig. S4 ^{13}C-NMR spectra of DTQ.

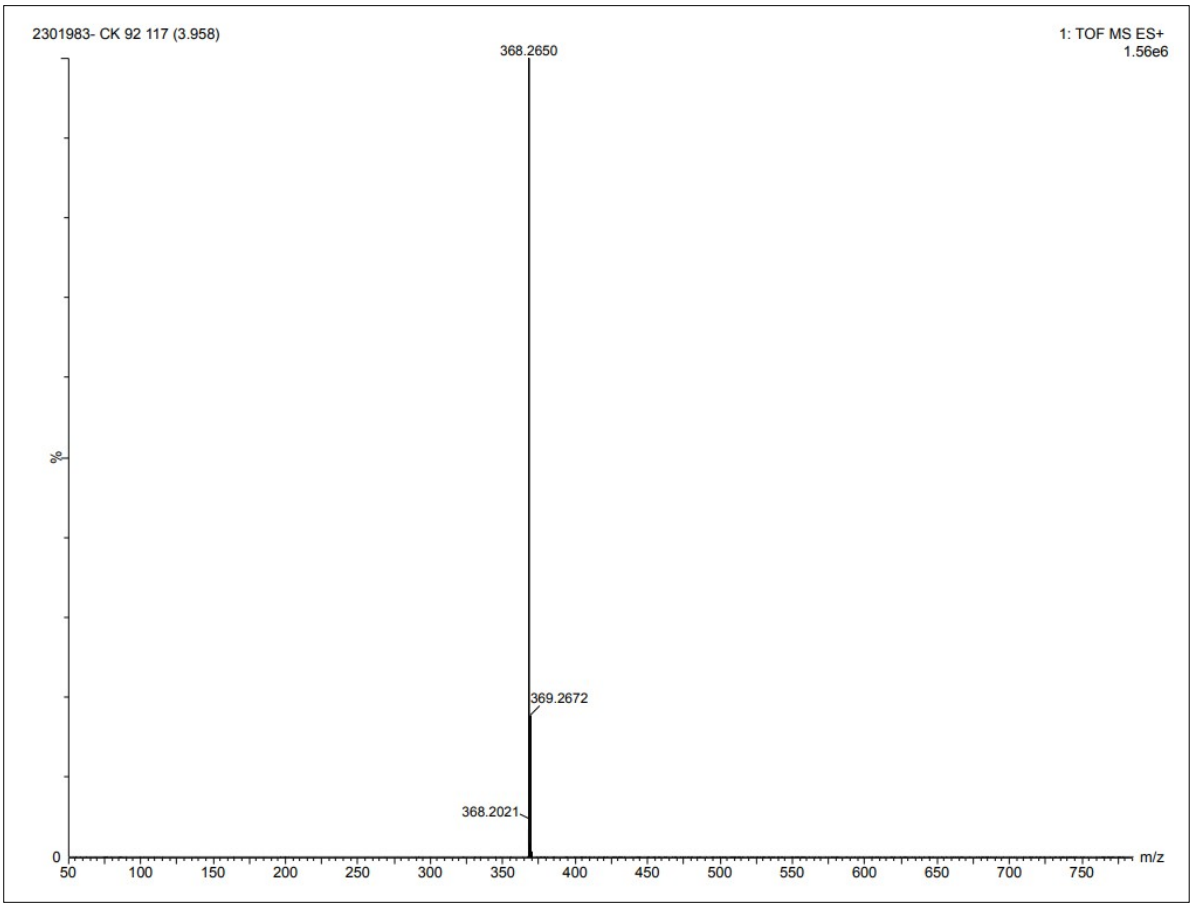

2301983- CK 92 117 (3.958)
1: TOF MS ES+
1.56e6
368.2650
369.2672
368.2021
%
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
m/z

Fig. S5 ESI-MS Spectrometry of DTH.

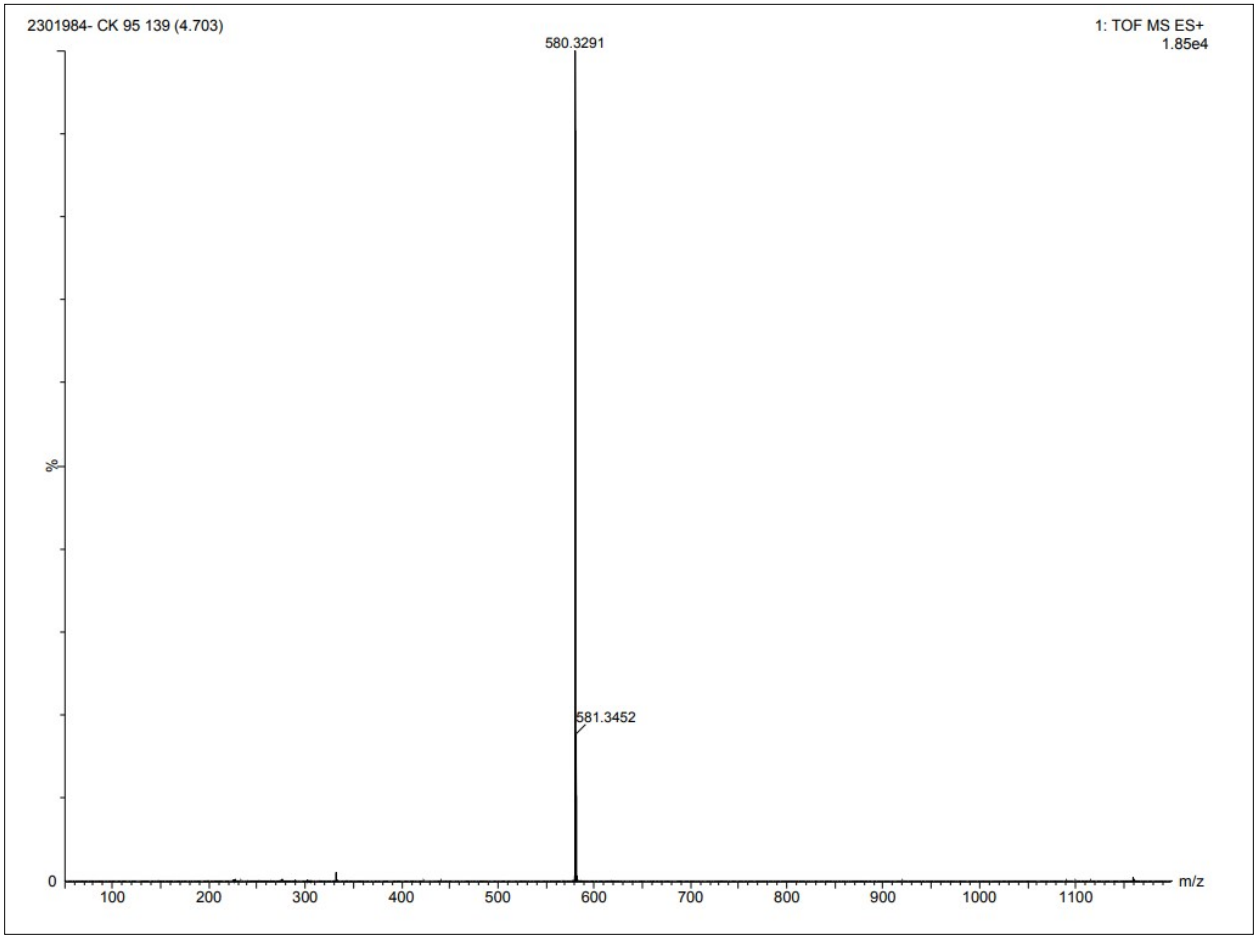


Fig. S6 ESI-MS Spectrometry of DTQ.

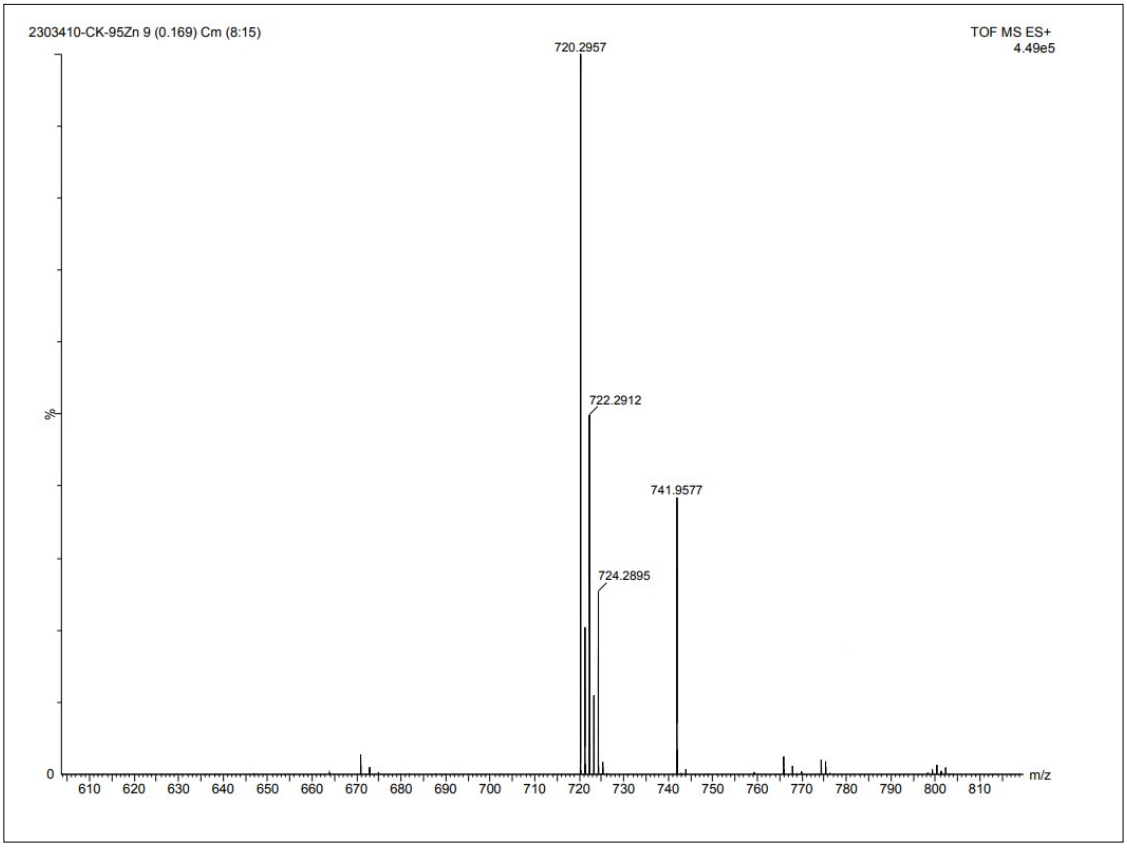


Fig. S7 ESI-MS Spectrometry of DTQ + Zn(II).

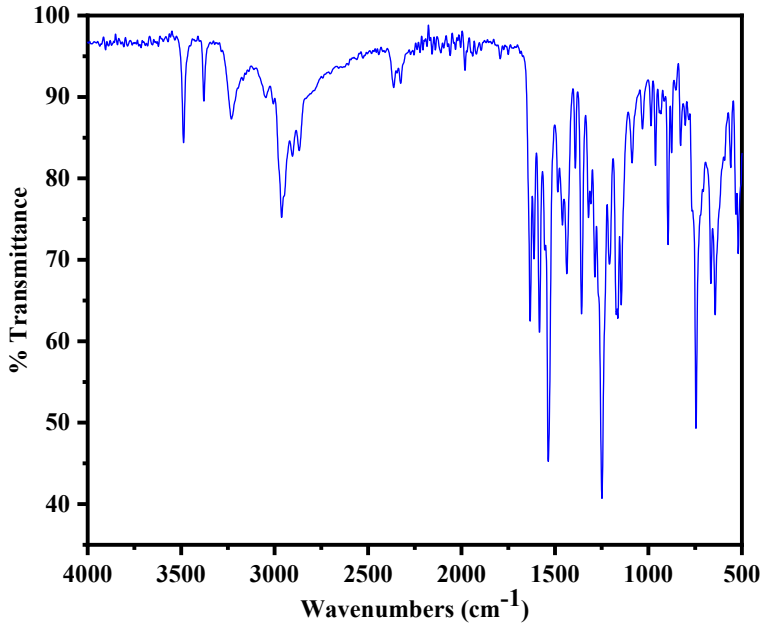


Fig. S8 FT-IR Spectra of DTH.

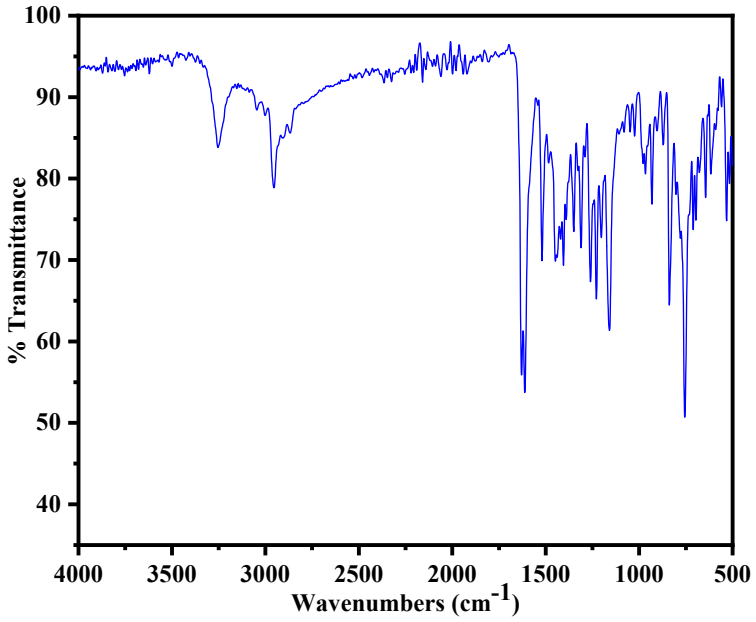


Fig. S9 FT-IR Spectra of DTQ.

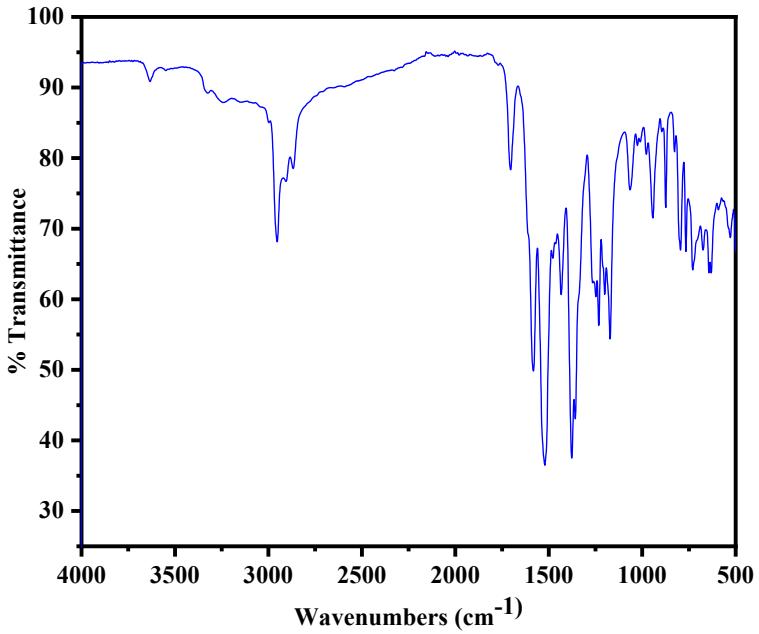


Fig. S10 FT-IR Spectra of DTQ + Zn(II).

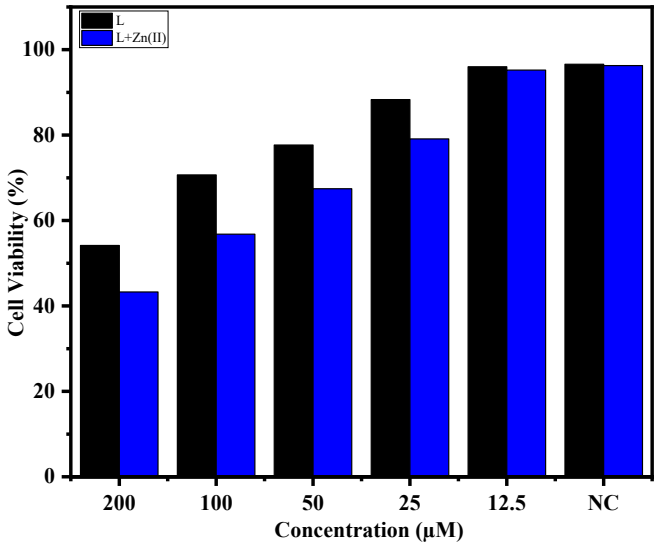


Fig. S11 MTT assay of L (DTQ) in presence and absence of Zn(II).

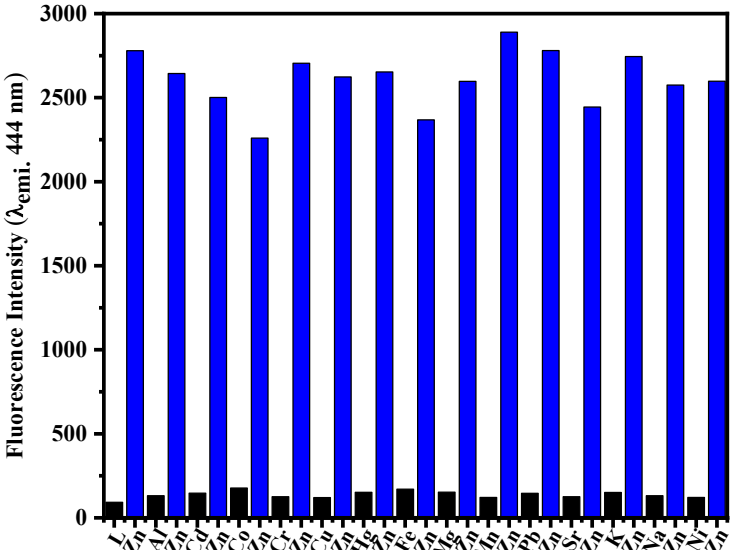


Fig. S12 Fluorescence intensity of DTQ at 444 nm (λex. = 370 nm) with different competing metal ions in presence and absence of Zn(II) in aq. acetonitrile (1:1).

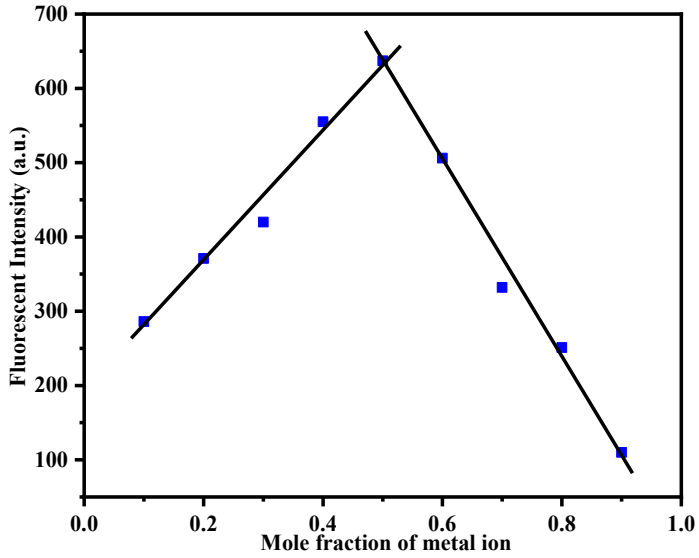


Fig. S13 Job's plot displaying the 1:1 stoichiometry between DTQ and Zn(II). The mole ratio [Zn(II)]/{[DTQ] + [Zn(II)]} was demonstrated.

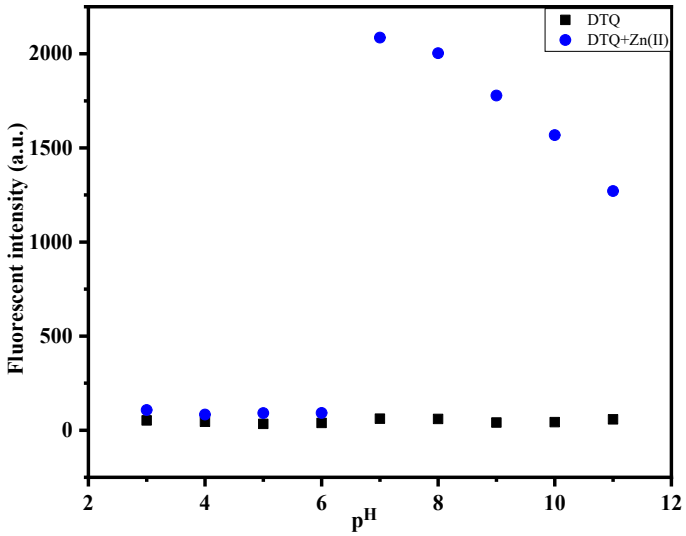


Fig. S14 pH (3.0-11.0) graph for DTQ towards Zn(II) in PBS.

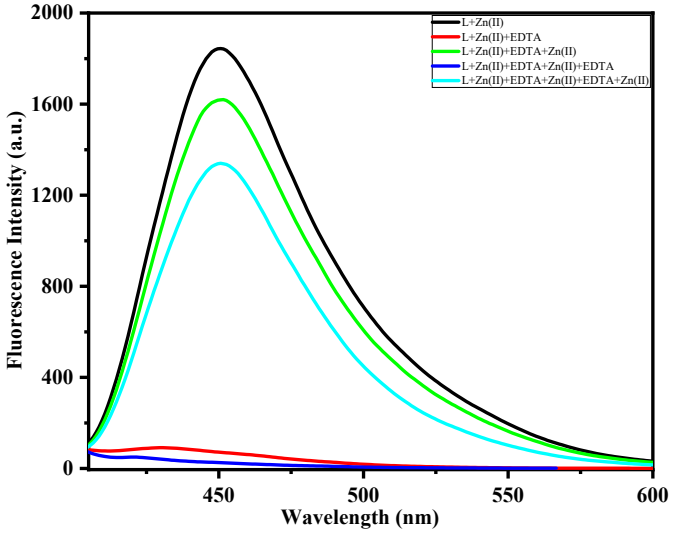


Fig. S15 Reversible investigations of DTQ with EDTA in aq. acetonitrile.

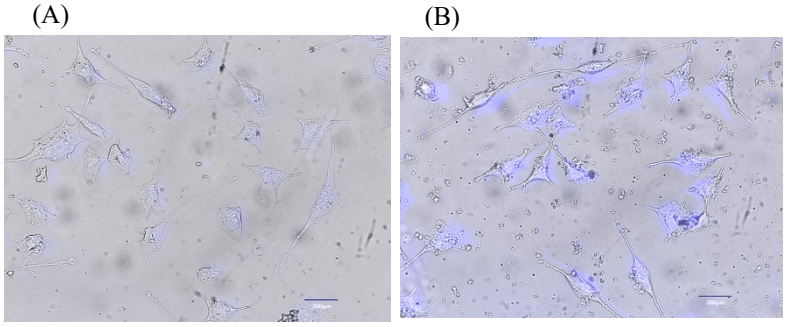
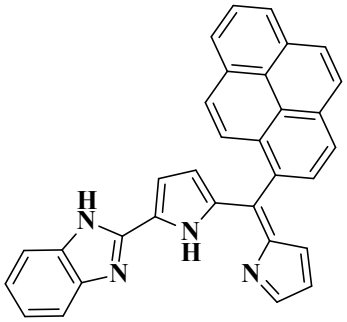
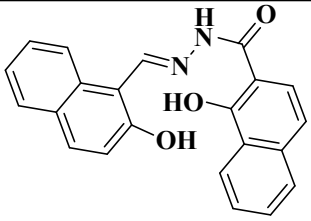
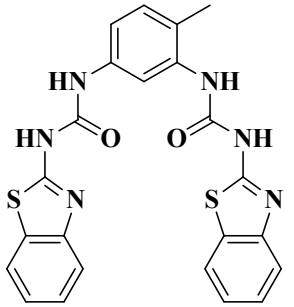
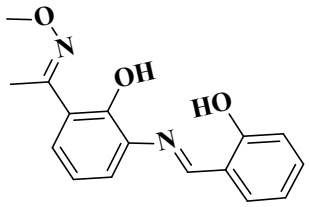
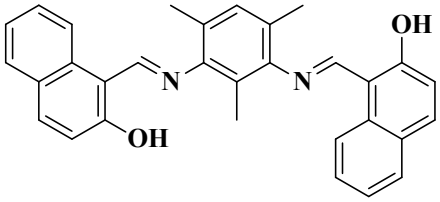
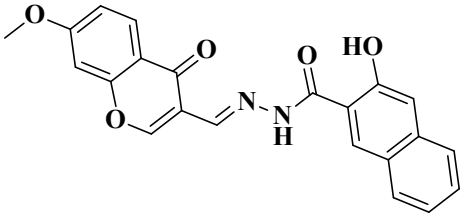
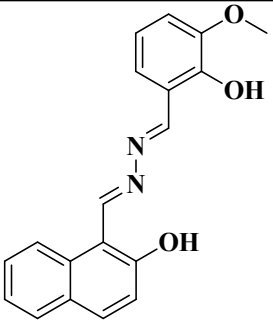
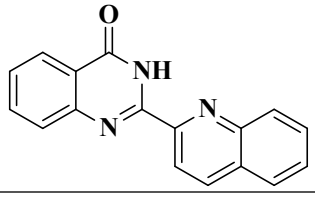
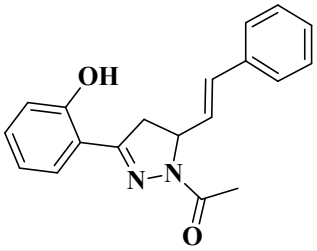
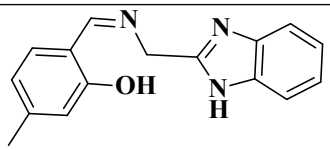
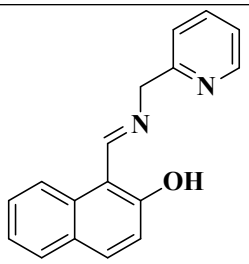
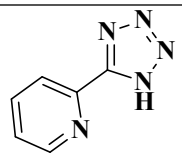
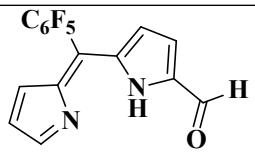
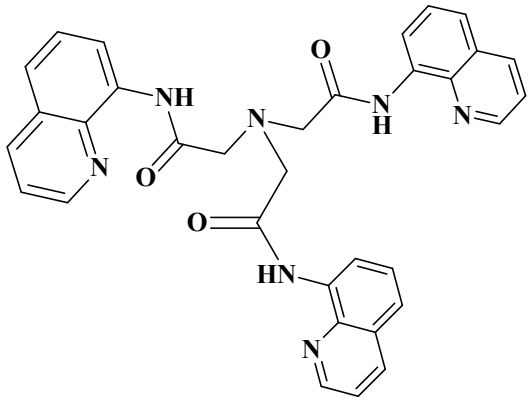
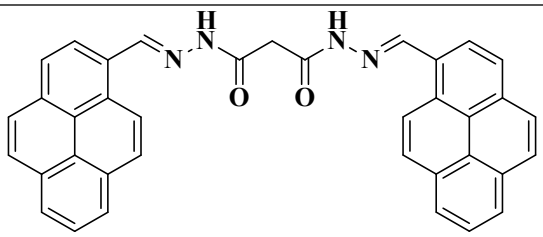
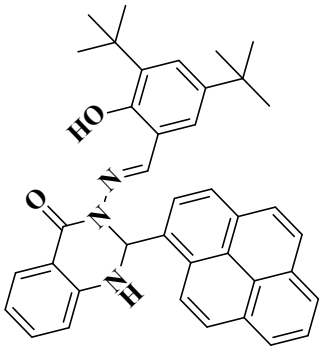


Fig. S16 Merged images (A) Bright field, (B) fluorescence microscopy.

Table 1 Comparison of sensor DTQ with previously reported probes for Zn^{2+} recognition.

Sl. No.	Sensor	Detection Limit (M)	Binding Constant (M^{-1})	Application	Reference
01		**0.23×10^{-6}**	**6.12×10^{4}**	**-**	[34]
02		**1.01×10^{-6}**	**1.08×10^{5}**	Cell imaging	[35]
03		**0.40×10^{-6}**	**1.0×10^{5}**	Cell imaging	[25]

04		**1.44×10^{-7}**	**2.24×10^{4}**	-	[36]
05		**1.47×10^{-6}**	**1.21×10^{5}**	Cell imaging	[37]
06		**1.73×10^{-7}**	**2.0×10^{4}**	-	[38]
07		**1.1×10^{-7}**	-	Test Strips	[39]
08		**8.82×10^{-7}**	**8.98×10^{4}**	-	[40]
09		**2.95×10^{-8}**	**1.46×10^{4}**	Cell imaging	[41]
10		**0.14×10^{-6}**	**7.99×10^{4}**	Real sample analysis	[42]

11		**1.96×10^{-6}**	-	Molecular switches and test strips	[43]
12		**7.5×10^{-7}**	**1.39×10^{5}**	Real sample analysis	[44]
13		**2.7×10^{-7}**	-	Cell imaging	[45]
14		**3.2×10^{-6}**	**4.0×10^{4}**	Cell imaging	[46]
15		**5.1×10^{-9}**	**3.0×10^{5}**	Cell imaging	[47]
*		**13.4×10^{-9}**	**1.47×10^{5}**	**Cell imaging and test strips**	**Present work**