Electronic Supporting Information

Ratiometric Fluorogenic Probe for Real-time Detection of SO_3^{2-} in Aqueous Medium: Application in Cellulose Paper Based Device and Potential to Sense in Mitochondria

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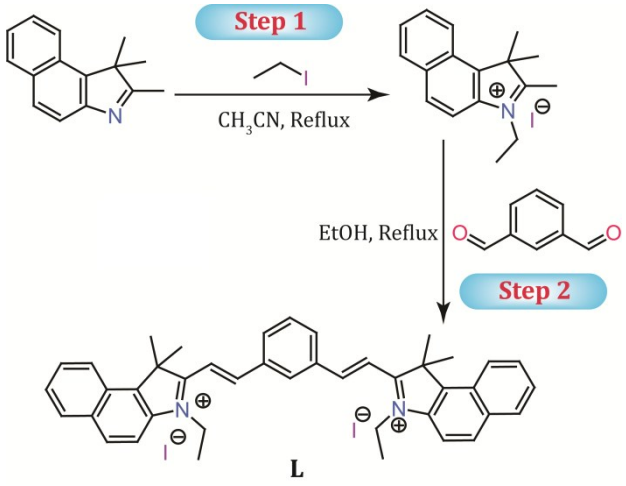
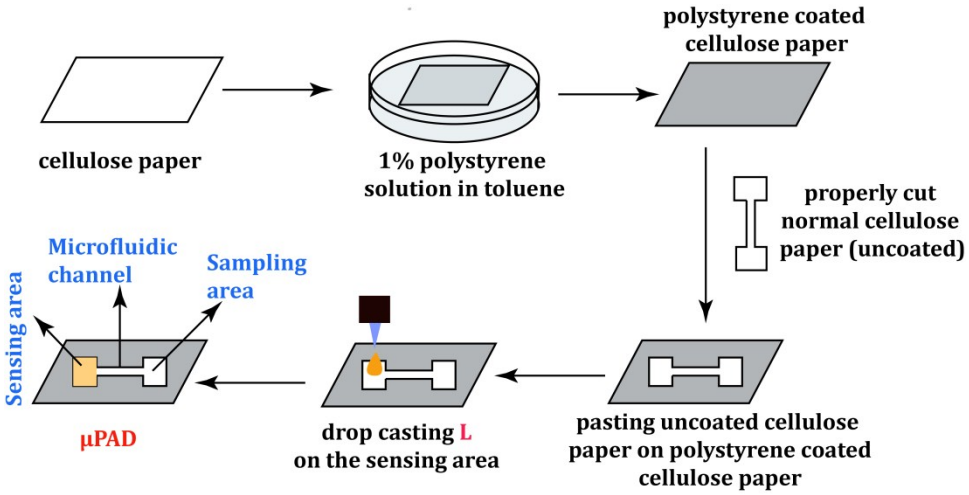


Scheme S1: Synthesis of the probe **L**.



Scheme S2: Graphical representation of microfluidic device (µPADs) fabrication.

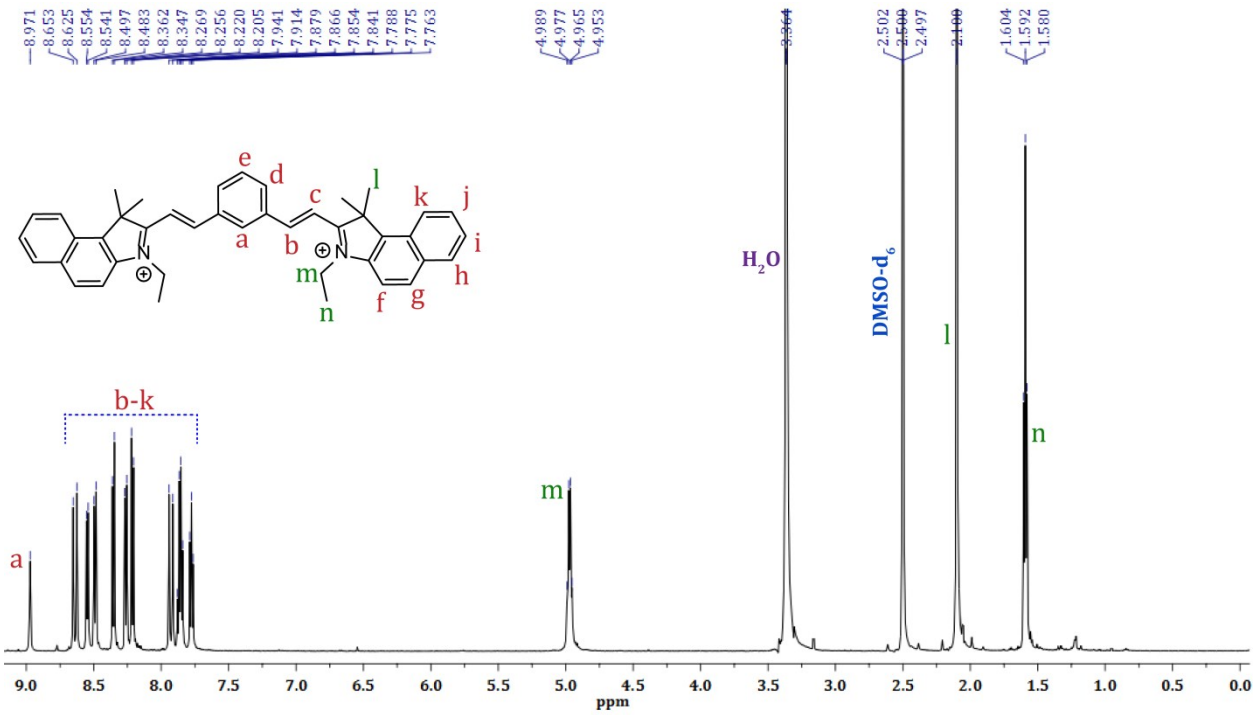


Figure S1: ^{1}H-NMR spectra of **L** in DMSO-d_6.

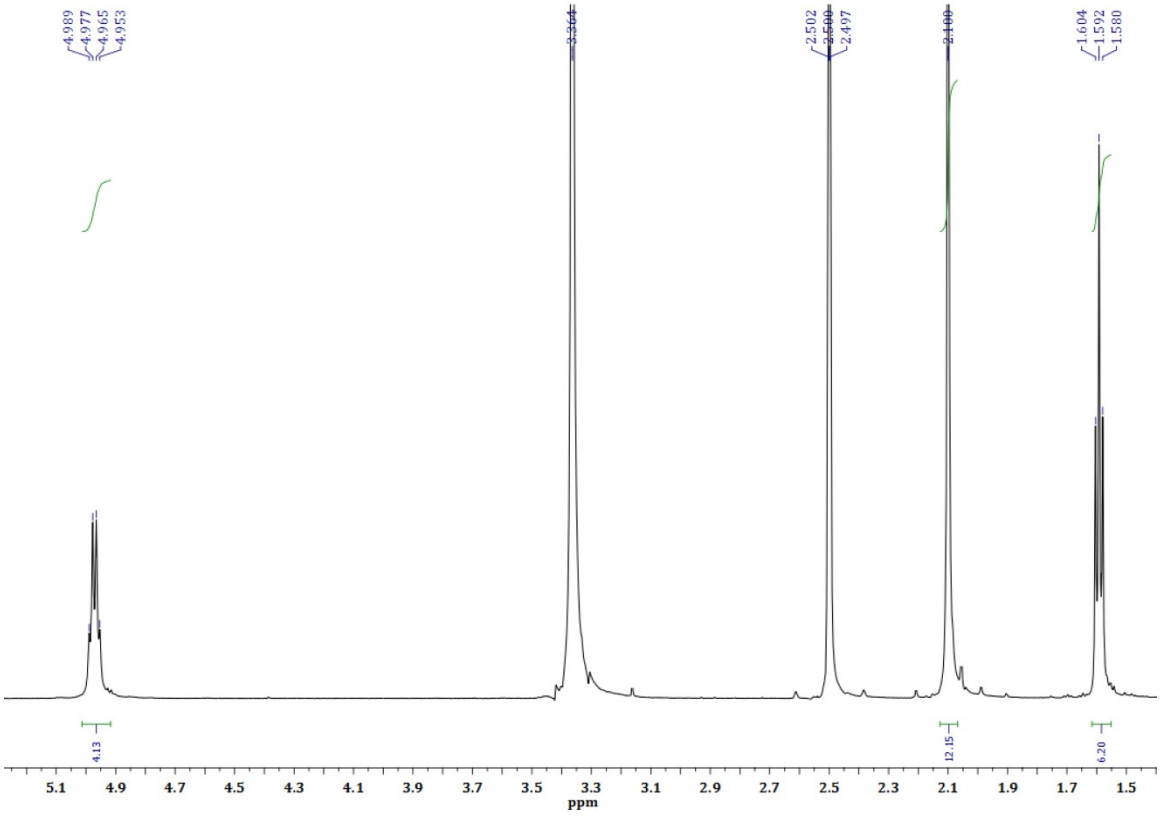


Figure S2: Expanded (aliphatic region) ^{1}H-NMR spectra of **L** in DMSO-d_6.

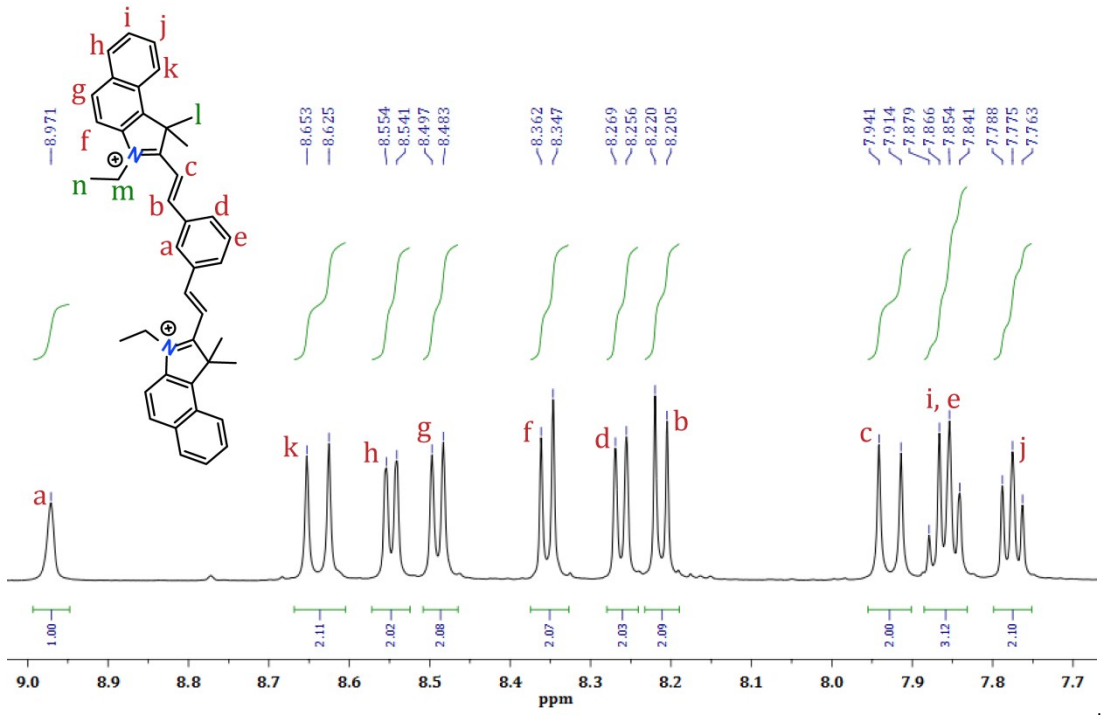


Figure S3: Expanded (aromatic region) ^{1}H-NMR spectra of **L** in DMSO-d_6.

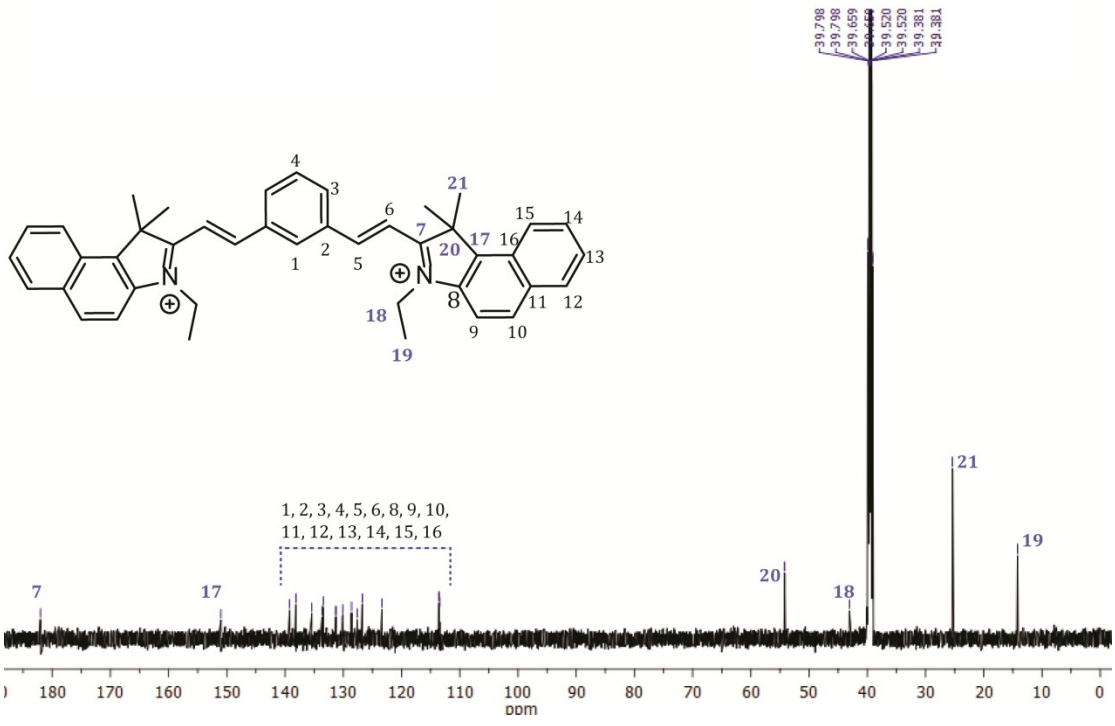


Figure S4: ^{13}C-NMR spectra of **L** in DMSO-d_6.

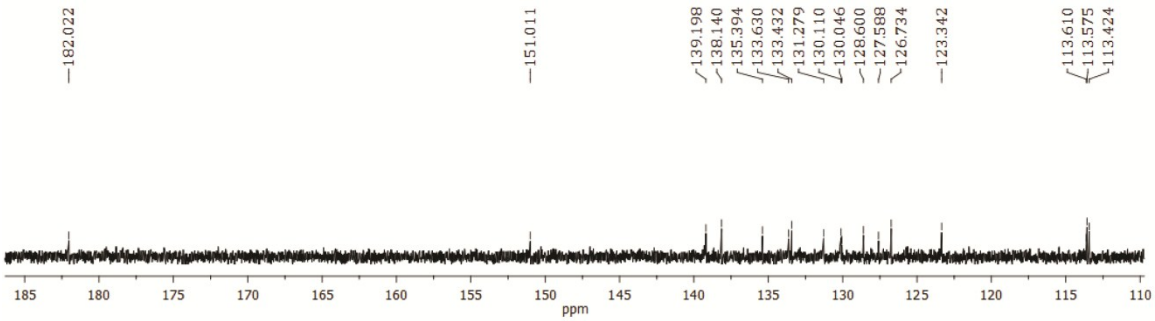


Figure S5: Expanded (aromatic region) ^{13}C-NMR spectra of **L** in DMSO-d_6.

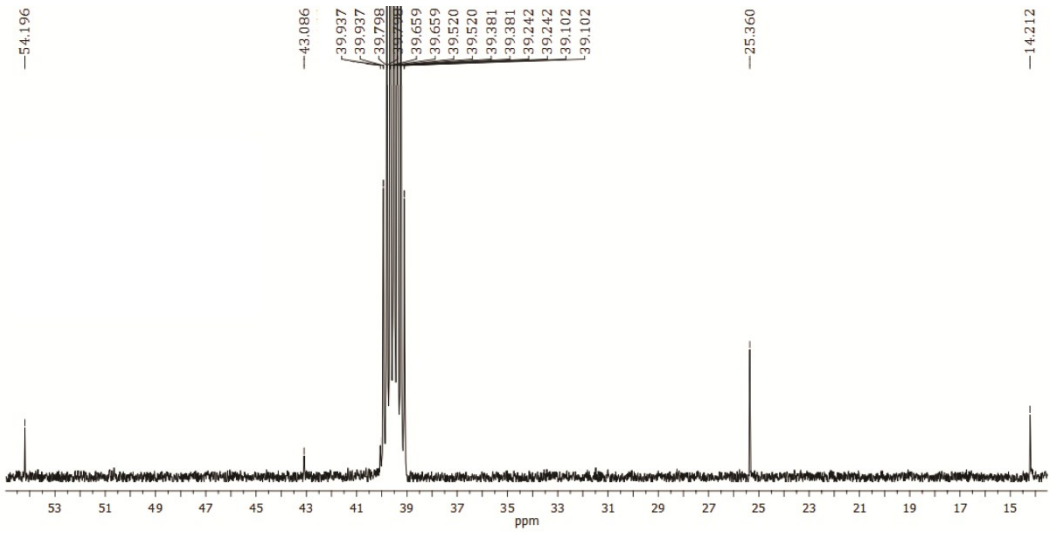


Figure S6: Expanded (aliphatic region) ^{13}C-NMR spectra of **L** in DMSO-d_6.

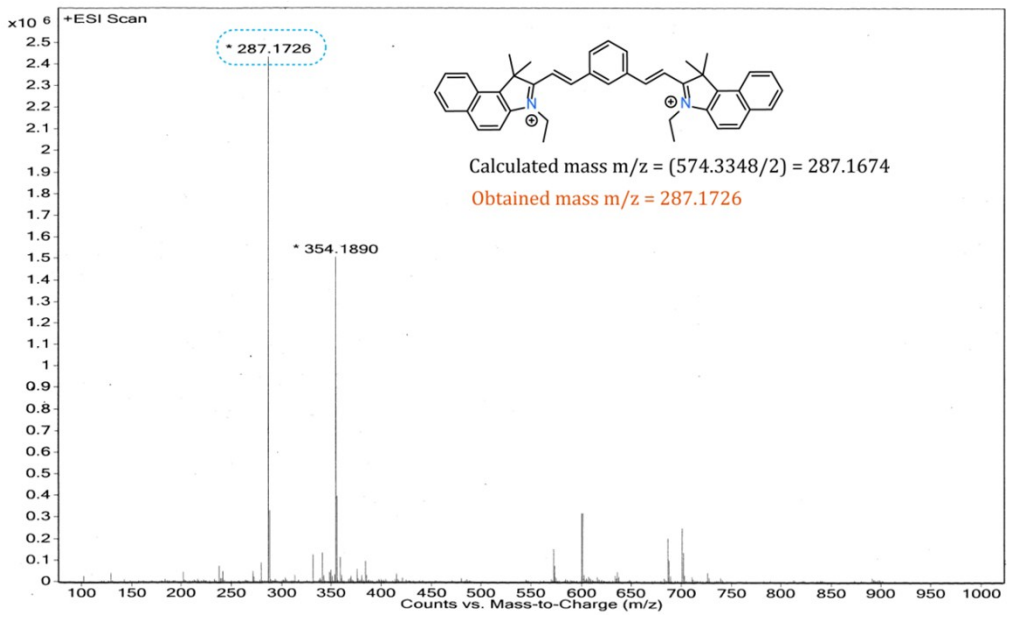


Figure S7: Mass spectrum of **L**.

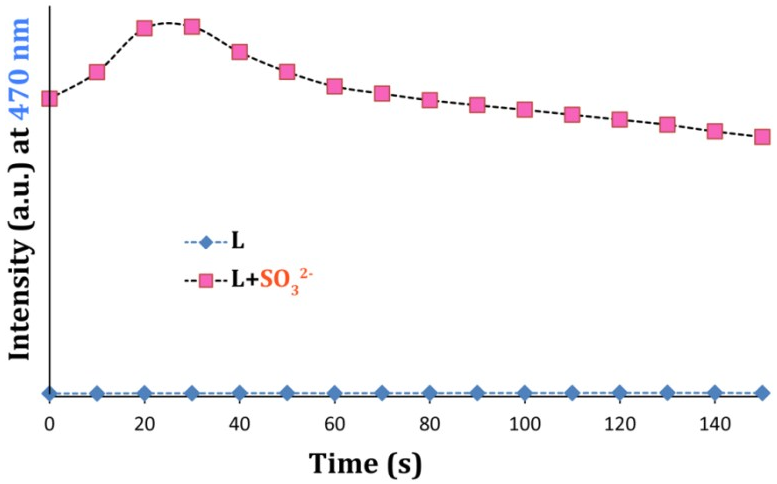


Figure S8. Changes in the emission intensity of **L** at 470 nm with time upon interaction with SO_3^{2-}; λ_{ex}=380 nm.

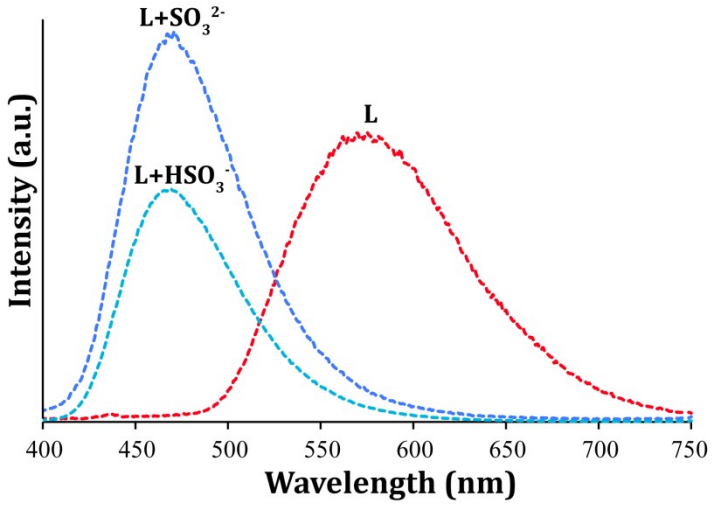


Figure S9. Fluorescence spectra of **L** in presence of $SO_3^{2-}$and HSO_3^- in ~100% aqueous buffer (PBS, pH 7.4); λ_{ex}=380 nm.

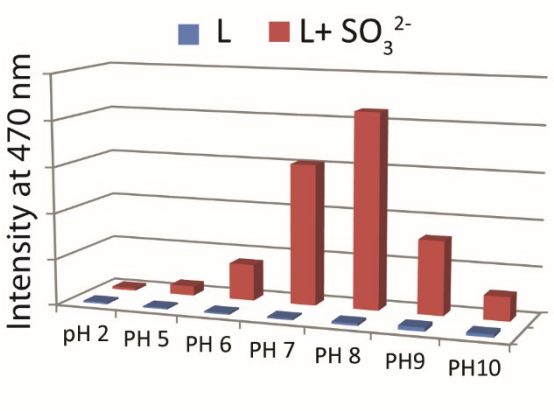


Figure S10. Changes in the emission intensity of **L** at 470 nm at different pH; with and without addition of SO_3^{2-}. Blue trace: **L** (10 μM) and Red trace: **L** with excess (20.0 equivalents) of SO_3^{2-}.

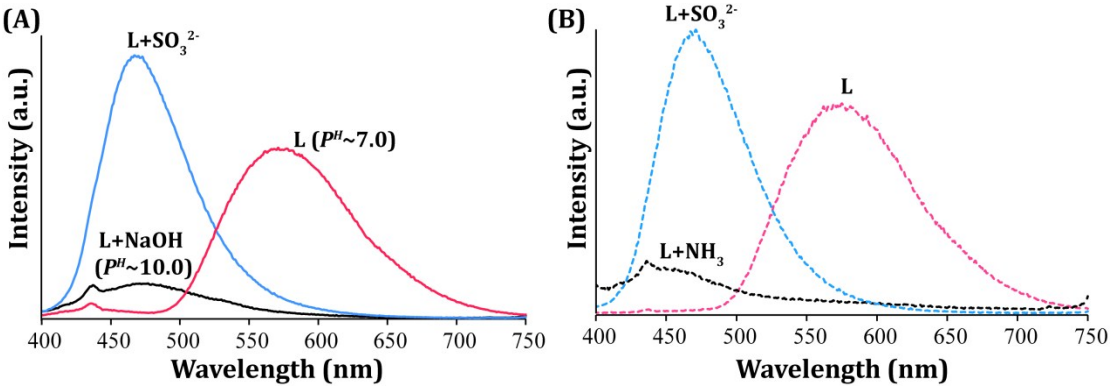


Figure S11. Fluorescence spectra of **L** in presence of excess (A) NaOH and (B) NH_3.

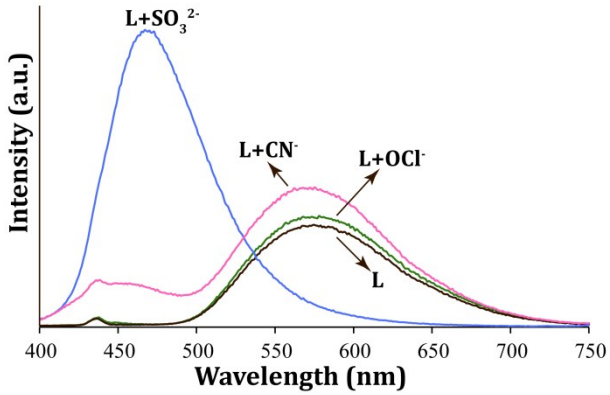


Figure S12. Fluorescence spectra of **L** in presence of CN^- and OCl^- in ~100% aqueous buffer (PBS, pH 7.4); λ_{ex}=380 nm.

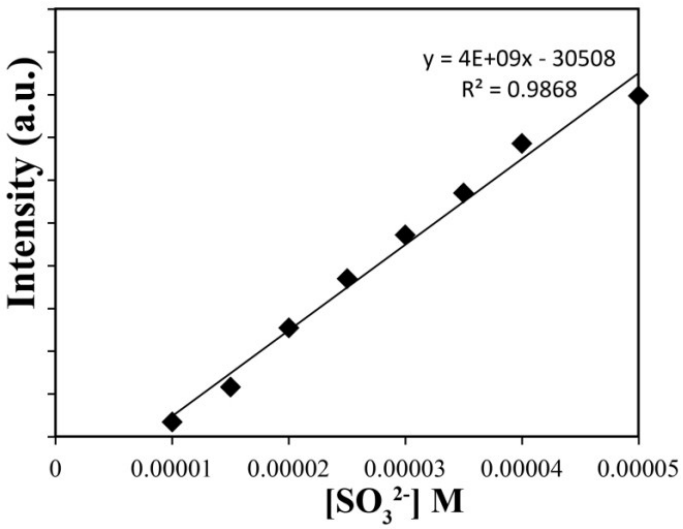


Figure S13. Fluorescence intensity (at 470 nm) vs. concentration of SO_3^{2-} plot for determination of detection limit.

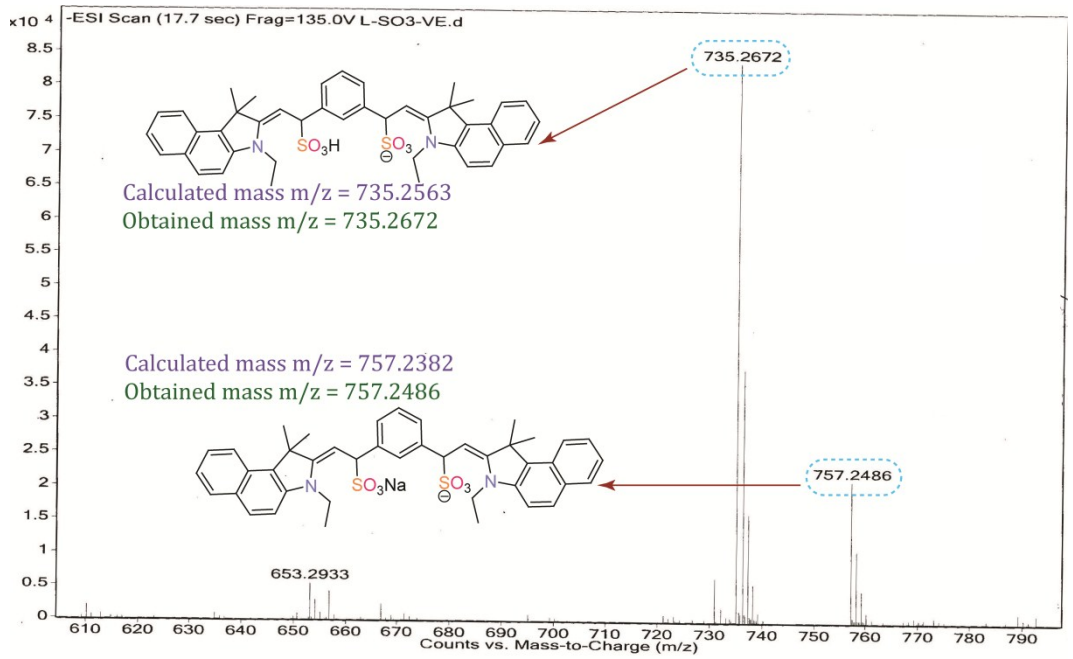


Figure S14. Mass spectrum of **L** in presence of SO_3^{2-}.

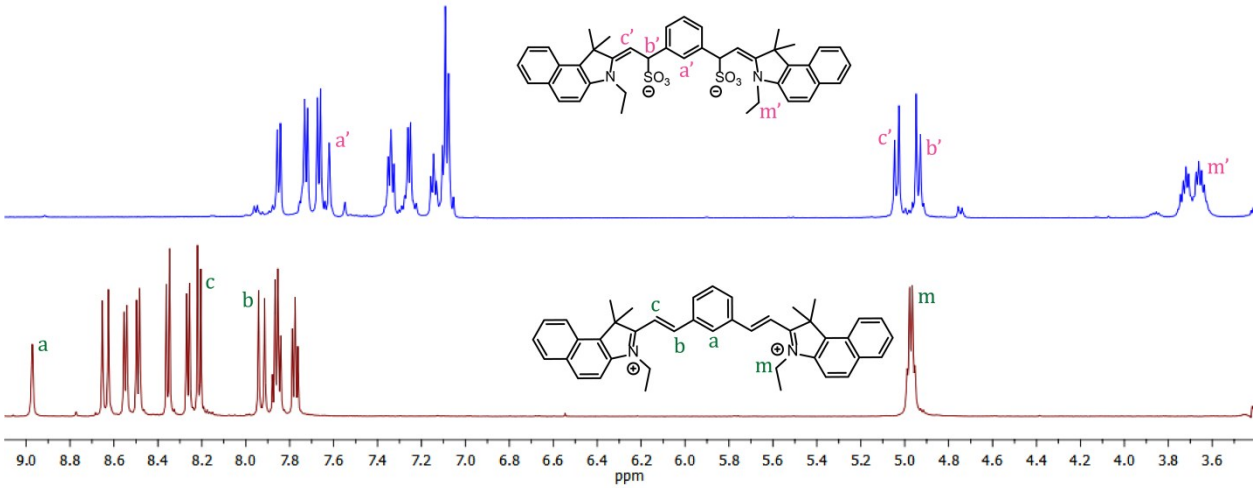


Figure S15. ^{1}H-NMR spectra of **L** and **L**-SO_3^{2-} adduct in DMSO-d_6.

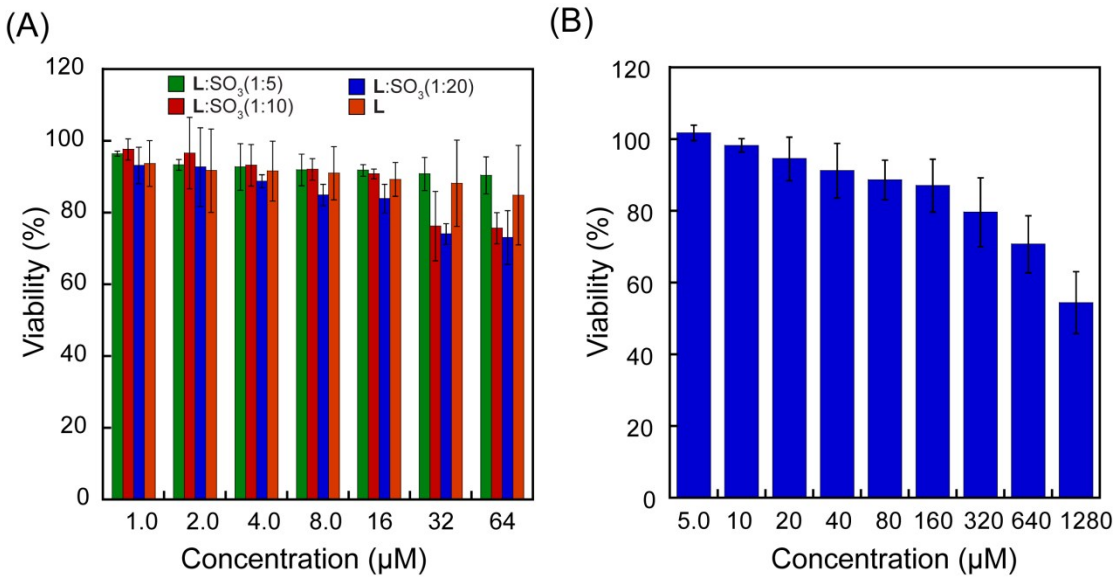


Figure S16. MTT assay to ascertain the cytotoxic effect of (A) varying concentrations of **L** and **L**-SO_3^{2-} adduct in varying ratios and (B) varying concentrations of Na_2SO_3 on HeLa cells.

Table S1. Crystal parameters and refinement data.

Code name	**L**
Empirical formula	$C_{42}\,H_{42}\,I_2\,N_2$
Formula weight	828.58
Crystal system	Hexagonal
a (Å)	15.6598(11)
b (Å)	15.6598(11)
c (Å)	34.080(2)
α (degree)	90
β (degree)	90
γ (degree)	120
V (Å^3)	7237.7(13)
Space group	*P* 61 2 2
Z value	6
ρ (cal)(g/cm^3)	1.141
μ (Mo Kα)(mm^{-1})	1.327
T(K)	298(2)
R_1; wR2 (I> 2 σ(I))	0.1231; 0.3163
R_1; wR2(all)	0.1956; 0.3489
Good-of-fit	1.000
Reflection measured	5814
Unique reflns	2029
Reflection parameters	212
CCDC No.	1534470