Supporting Information

A Sole Multi-Analyte receptor responds with three distinct fluorescence signals: Traffic signal like sensing of Al^{3+}, Zn^{2+} and F^-

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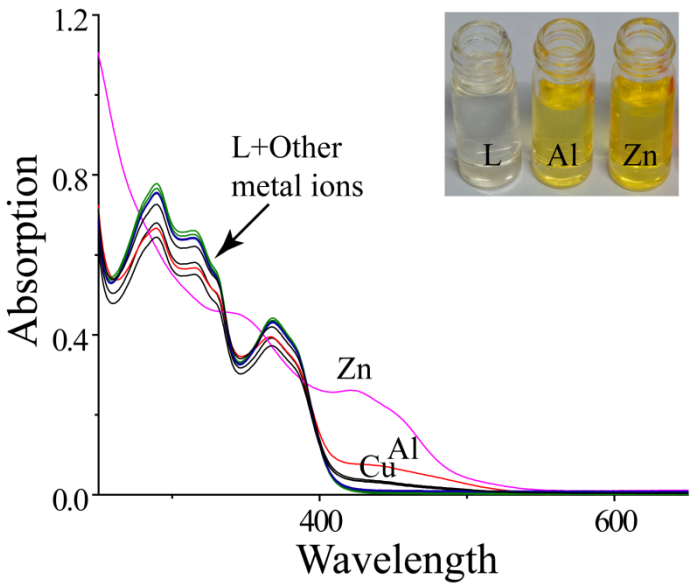

Fig. S1: Changes in the absorption spectra of **L** upon the addition of different metal ions. INSET: Visual colour change upon the addition of Al^{3+} and Zn^{2+} to **L**.

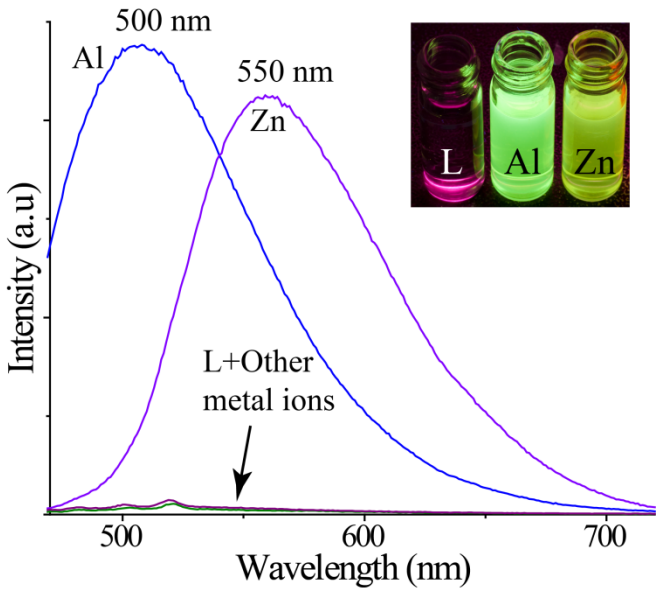

Fig. S2: Changes in the emission spectra of **L** upon the addition of different metal ions. INSET: Visual colour change upon the addition of Al^{3+} and Zn^{2+} to **L** under UV lamp (λ_{ex}= 365 nm).

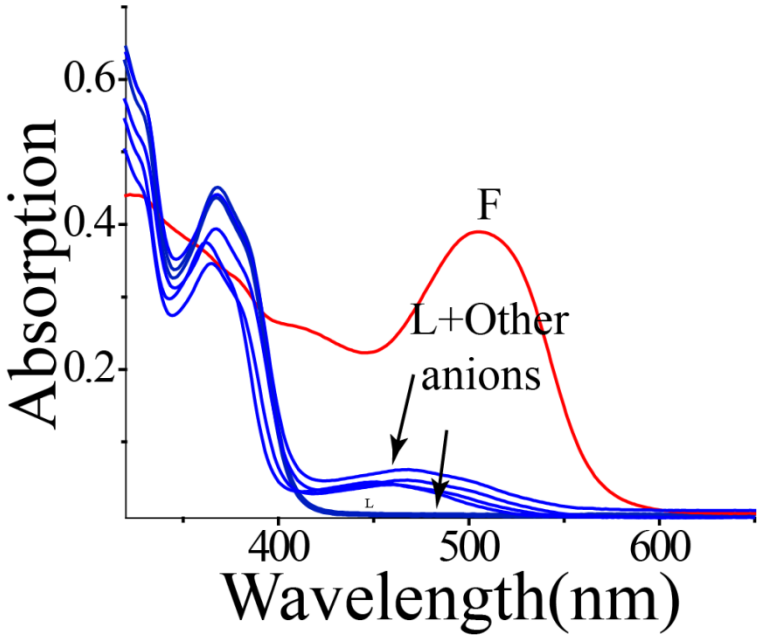

Fig. S3: Changes in the absorption spectra of **L** upon the addition of different anions.

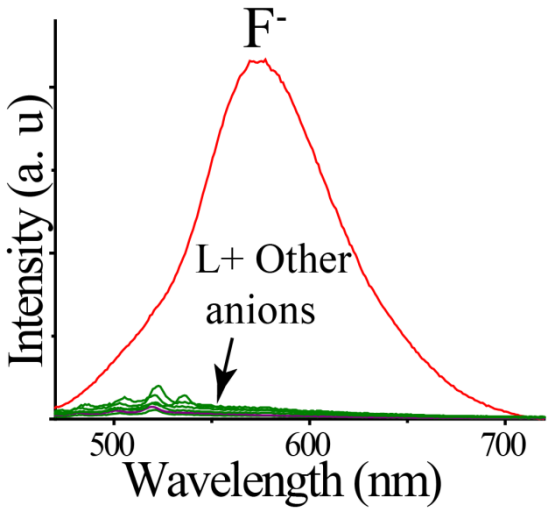

Fig. S4: Changes in the emission spectra of **L** upon the addition of different anions.

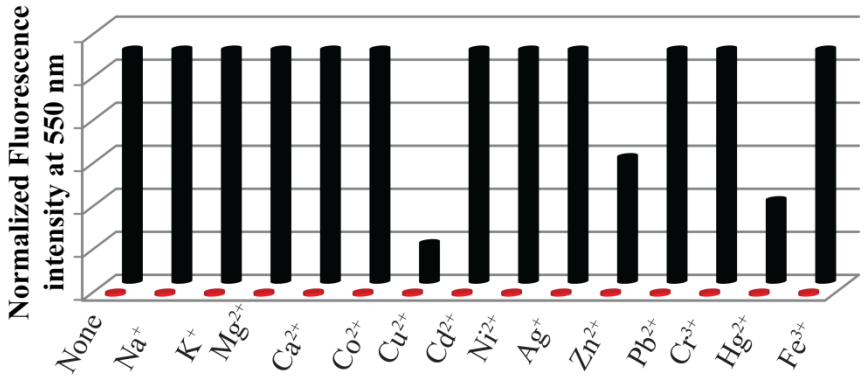

Fig S5: Normalized fluorescence responses of **L** (10 μM) to various cations in mixed solvent. The red bars represent the emission intensities of **L** in the presence of cations of interest (5 eqv.). The black bars represent the change of the emission that occurs upon the subsequent addition of Al^{3+} to the above solution.

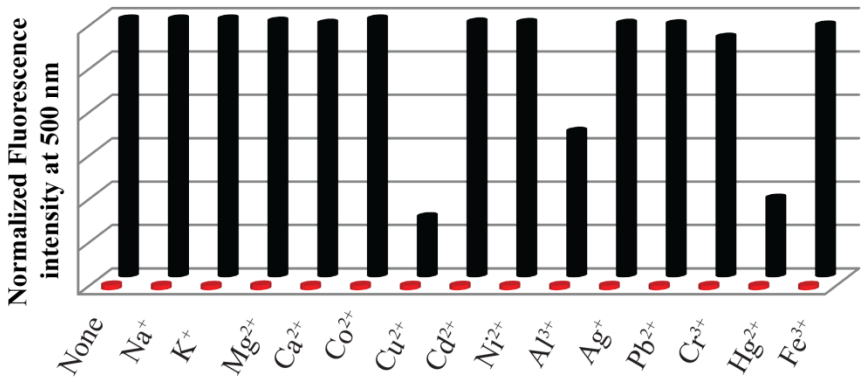

Fig S6: Normalized fluorescence responses of **L** (10 μM) to various cations in mixed solvent. The red bars represent the emission intensities of **L** in the presence of cations of interest (5 eqv.). The black bars represent the change of the emission that occurs upon the subsequent addition of Zn^{2+} to the above solution.

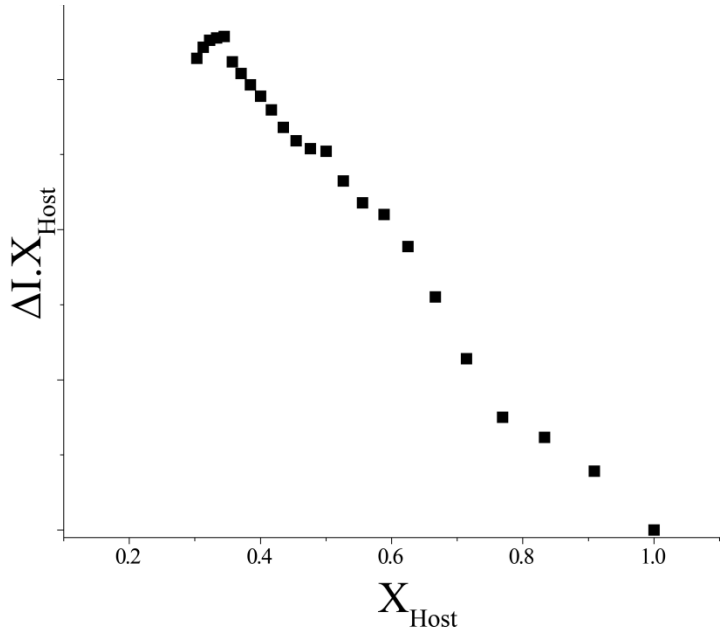

Fig S7: Job's plot between **L** and Al^{3+} ions. X_{Host} is the mole fraction of **L** and ΔI is the change $(I-I_0)$ in the intensity of the emission spectra in presence of guest i.e; Al^{3+}.

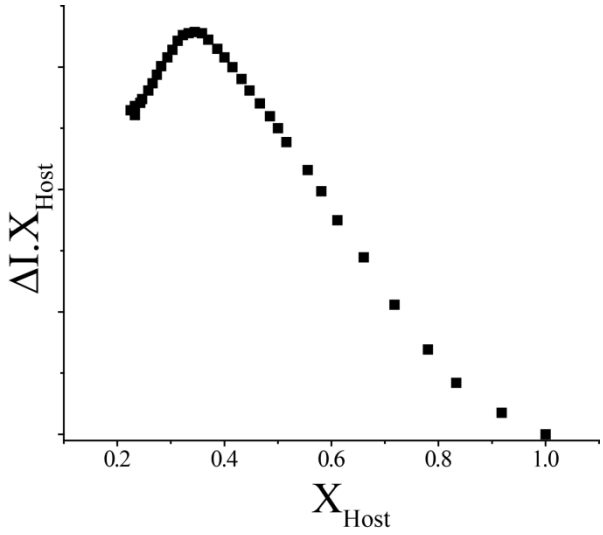

Fig S8: Job's plot between **L** and Zn^{2+} ions. X_{Host} is the mole fraction of **L** and ΔI is the change $(I-I_0)$ in the intensity of the emission spectra in presence of guest i.e; Zn^{2+}.

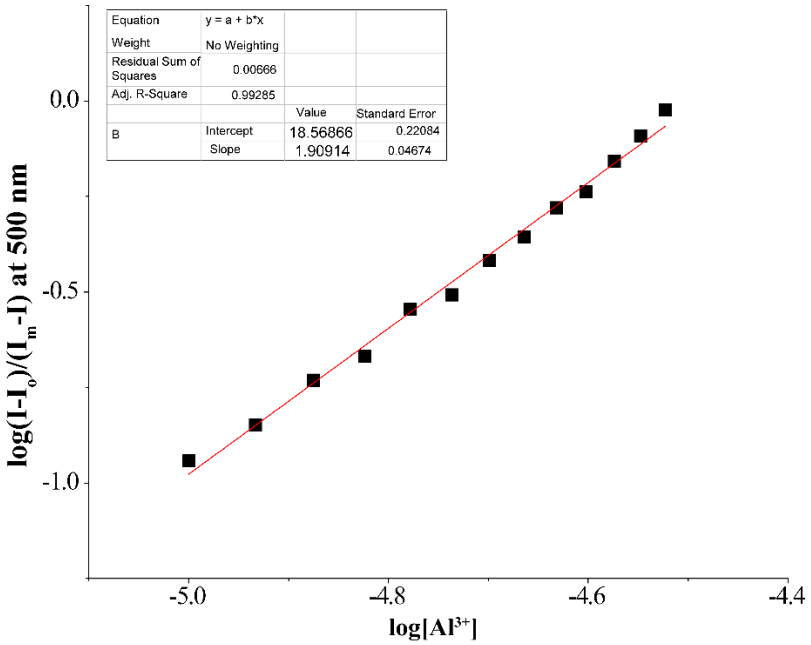

Fig S9: Bensei-Hildebrand plot obtained for Al^{3+} from the emission experiment (emission intensity calculated from 500 nm) studies.

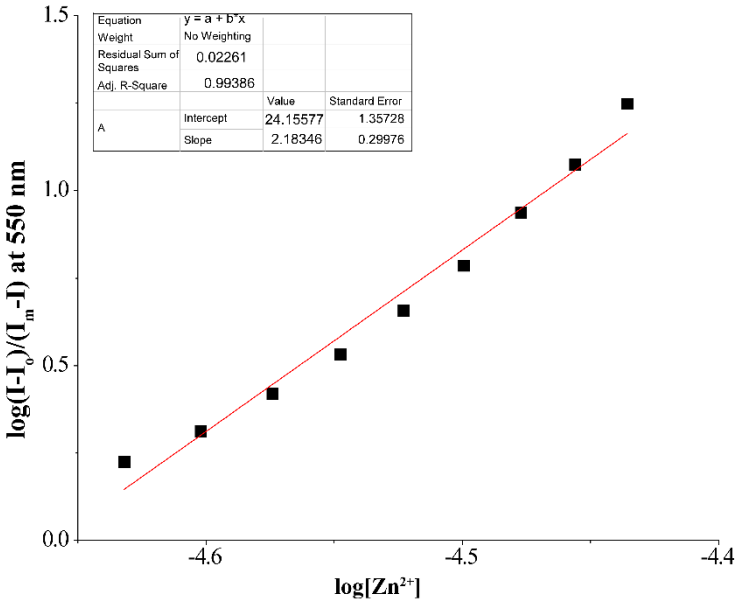

Fig S10: Bensei-Hildebrand plot obtained for Zn^{2+} from the emission experiment (emission intensity calculated from 550 nm) studies.

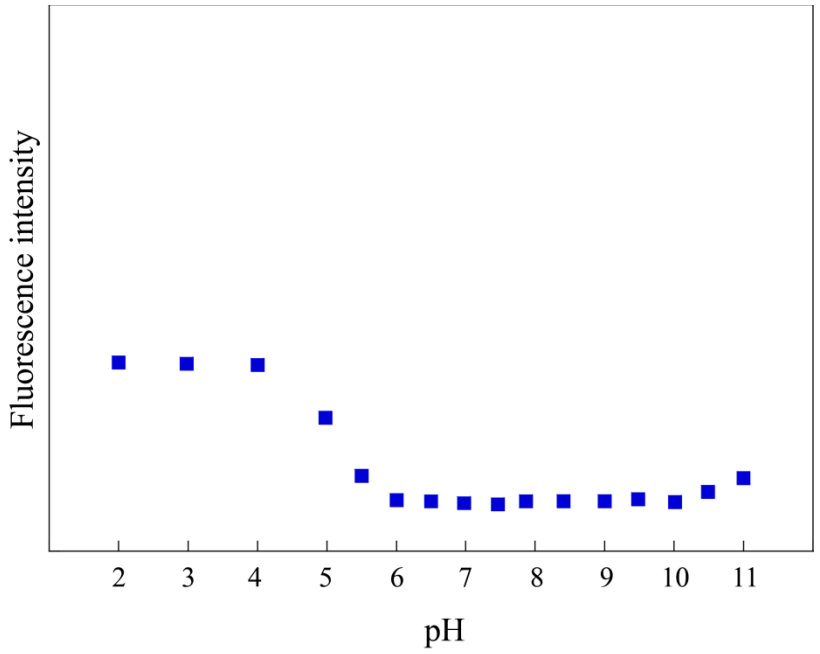

Fig S11: Effect of pH on the fluorescence intensity of **L**.

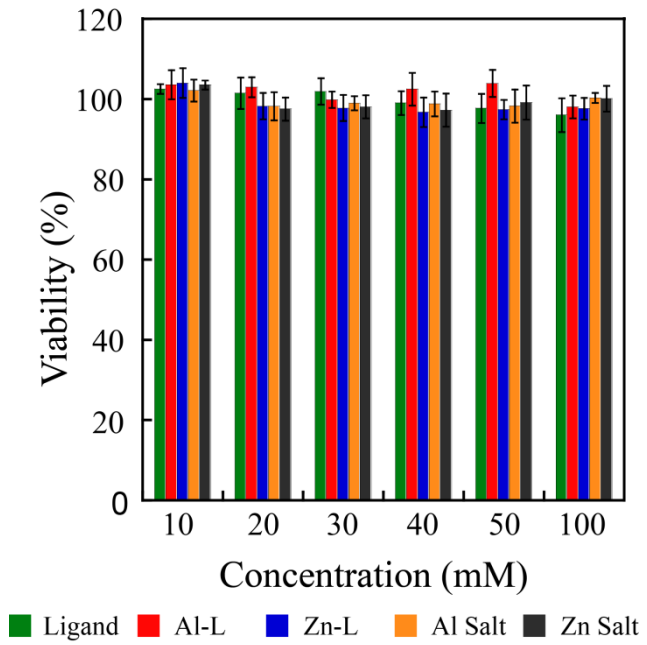

Fig S12: MTT assay to determine the cytotoxic effects of compounds **L**, **L**–Al and **L**–Zn complex on HeLa cells.

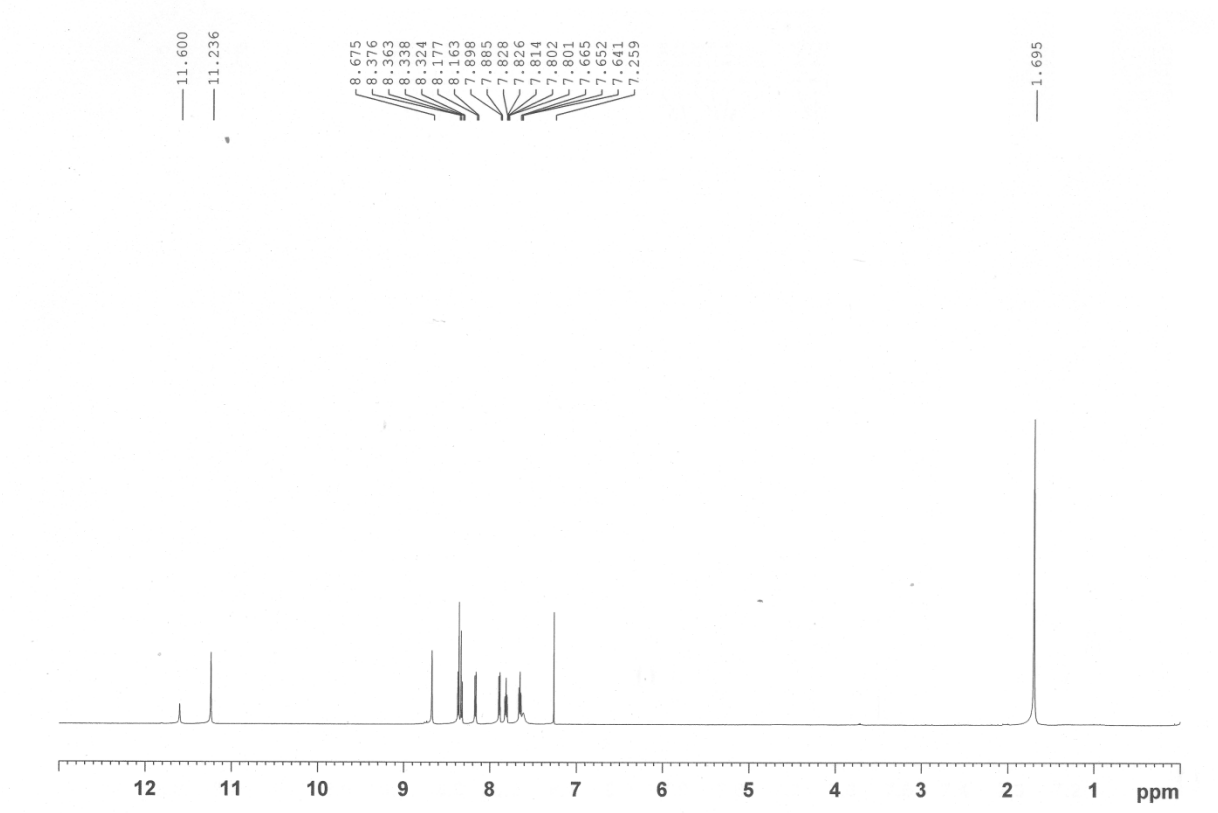

Fig S13: ^{1}H-NMR spectra of **L** in $CDCl_3$.

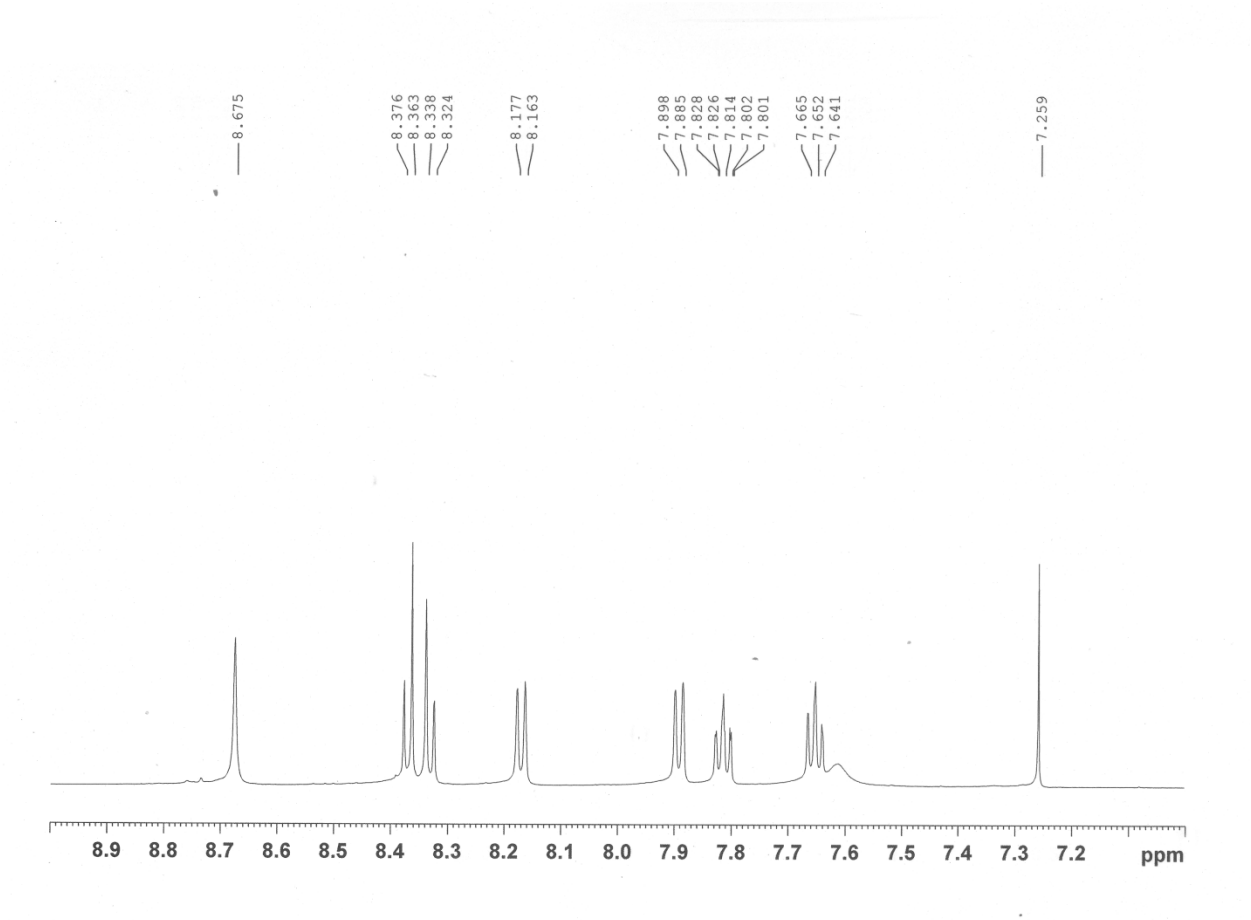

Fig S14: Expanded ^{1}H-NMR spectra of **L** in $CDCl_3$.

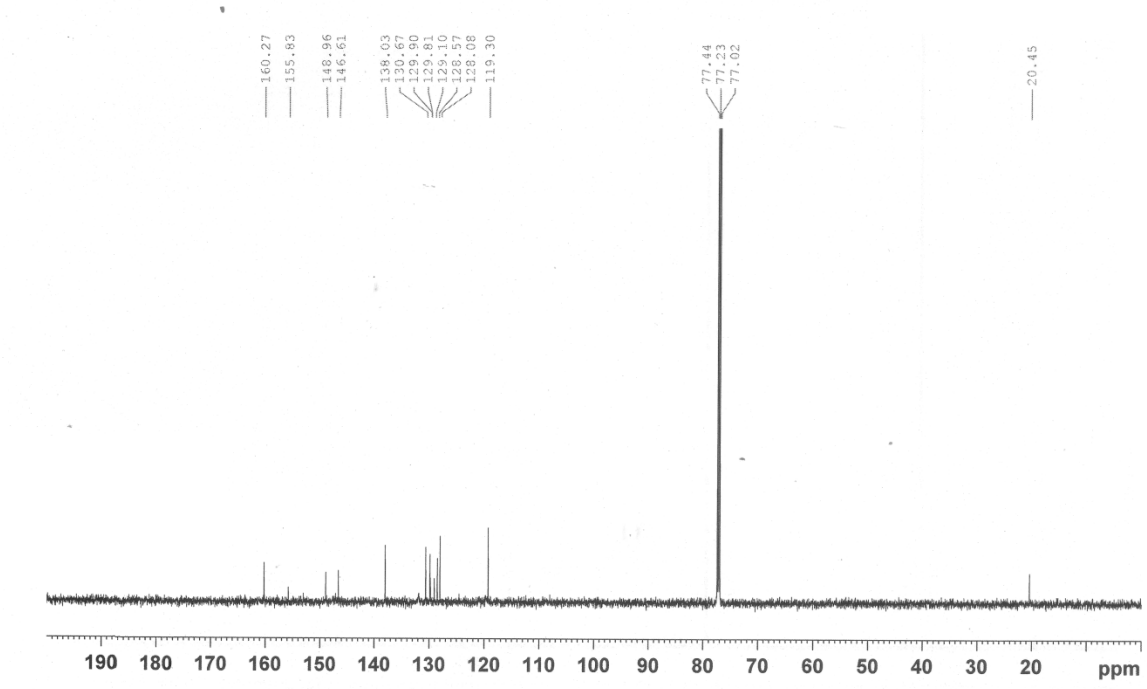

Fig S15: ^{13}C-NMR spectra of **L** in $CDCl_3$.

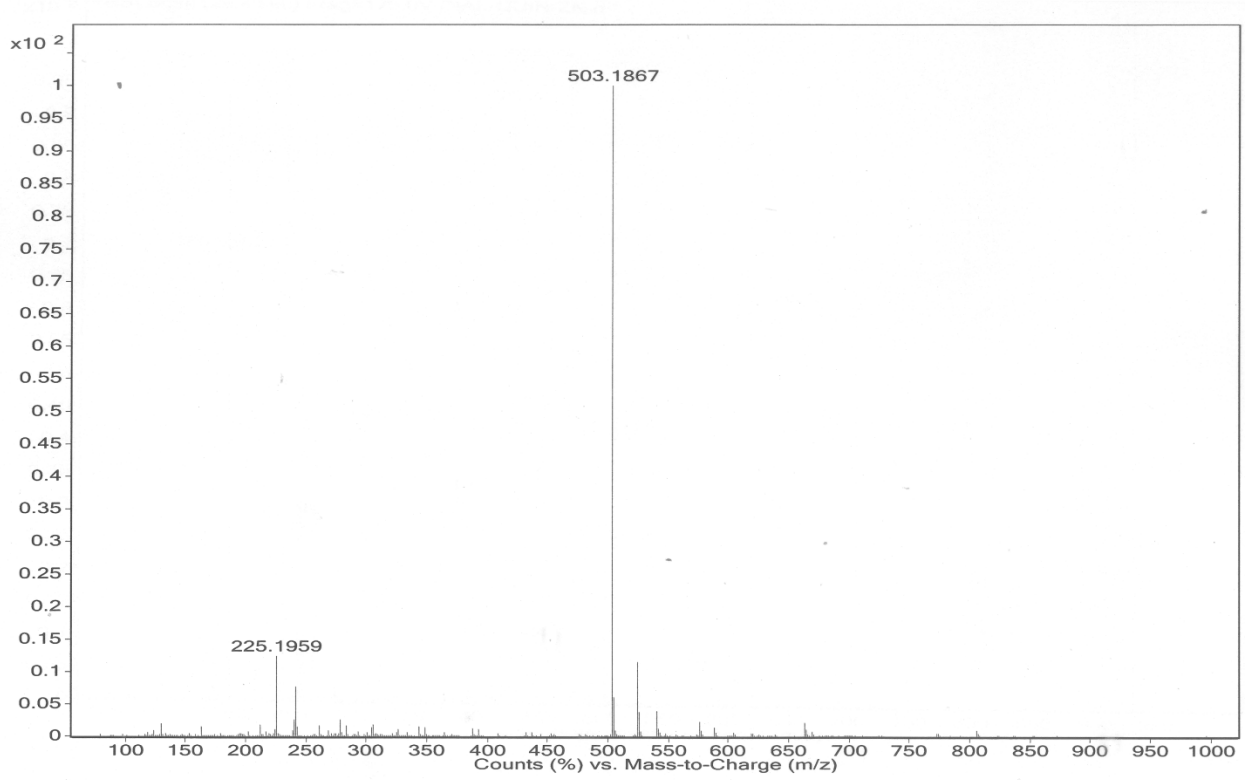

Fig S16: Mass spectrum of **L**, Calculated [**L** +H]$^{+}$= 503.1832, Found 503.1867 (Mass spectrum obtained in positive mode).

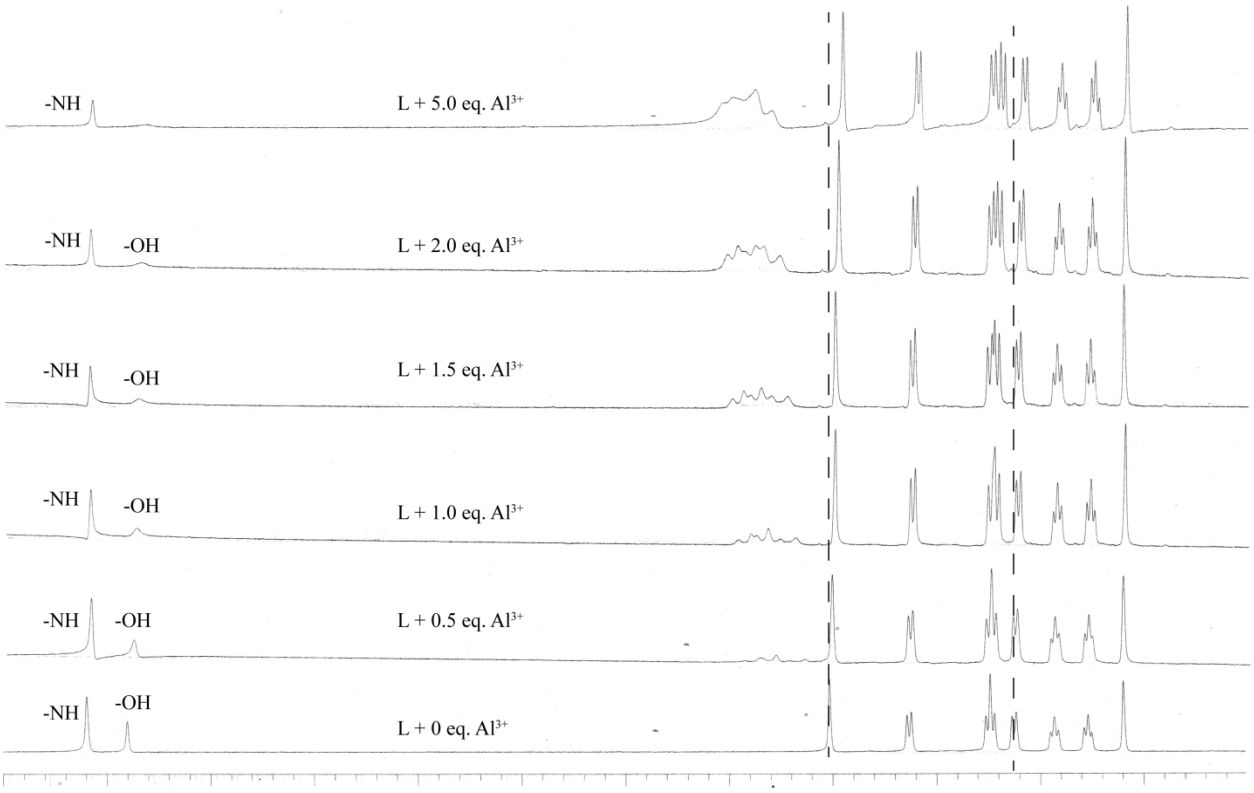

Fig. S17: ^{1}H-NMR titration spectras of **L** with Al^{3+} in DMSO-d_6.

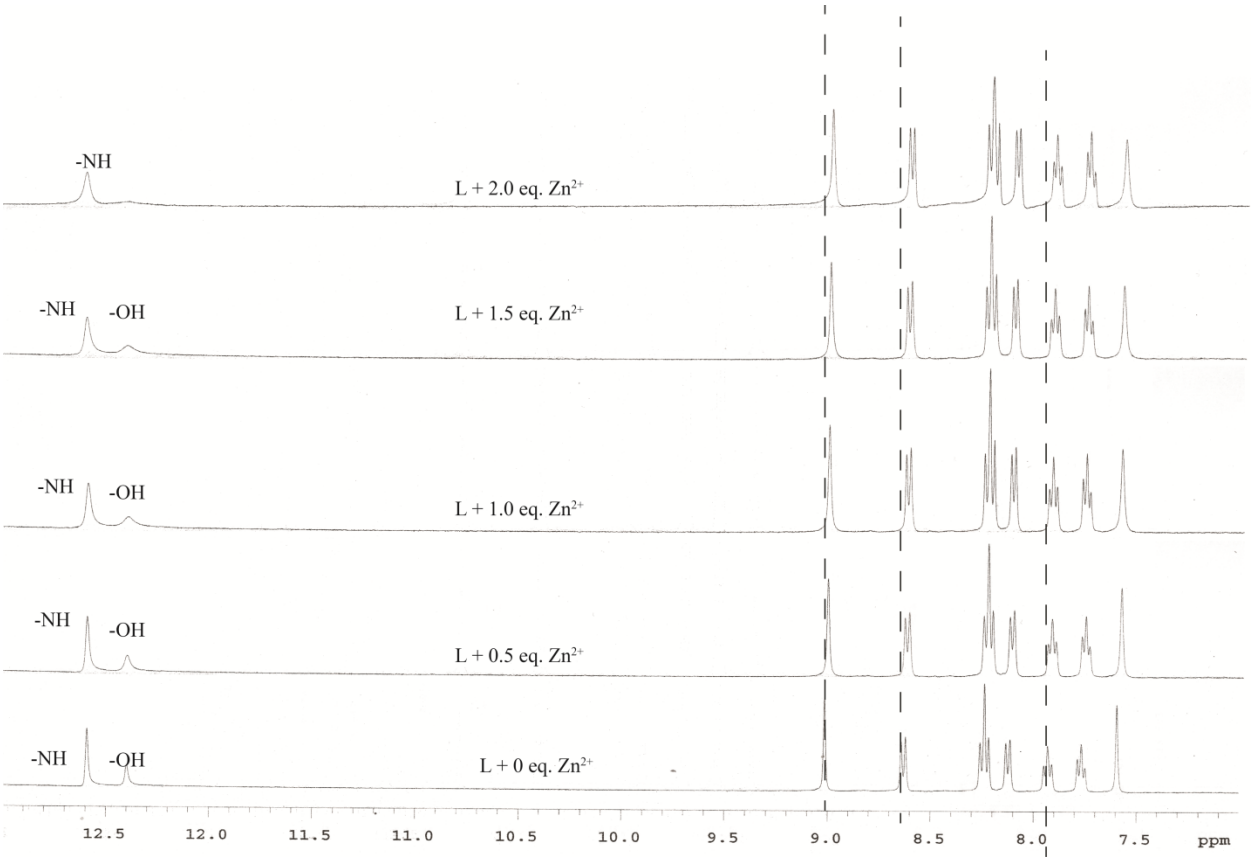

Fig. S18: ^{1}H-NMR titration spectras of **L** with Zn^{2+} in DMSO-d_6.

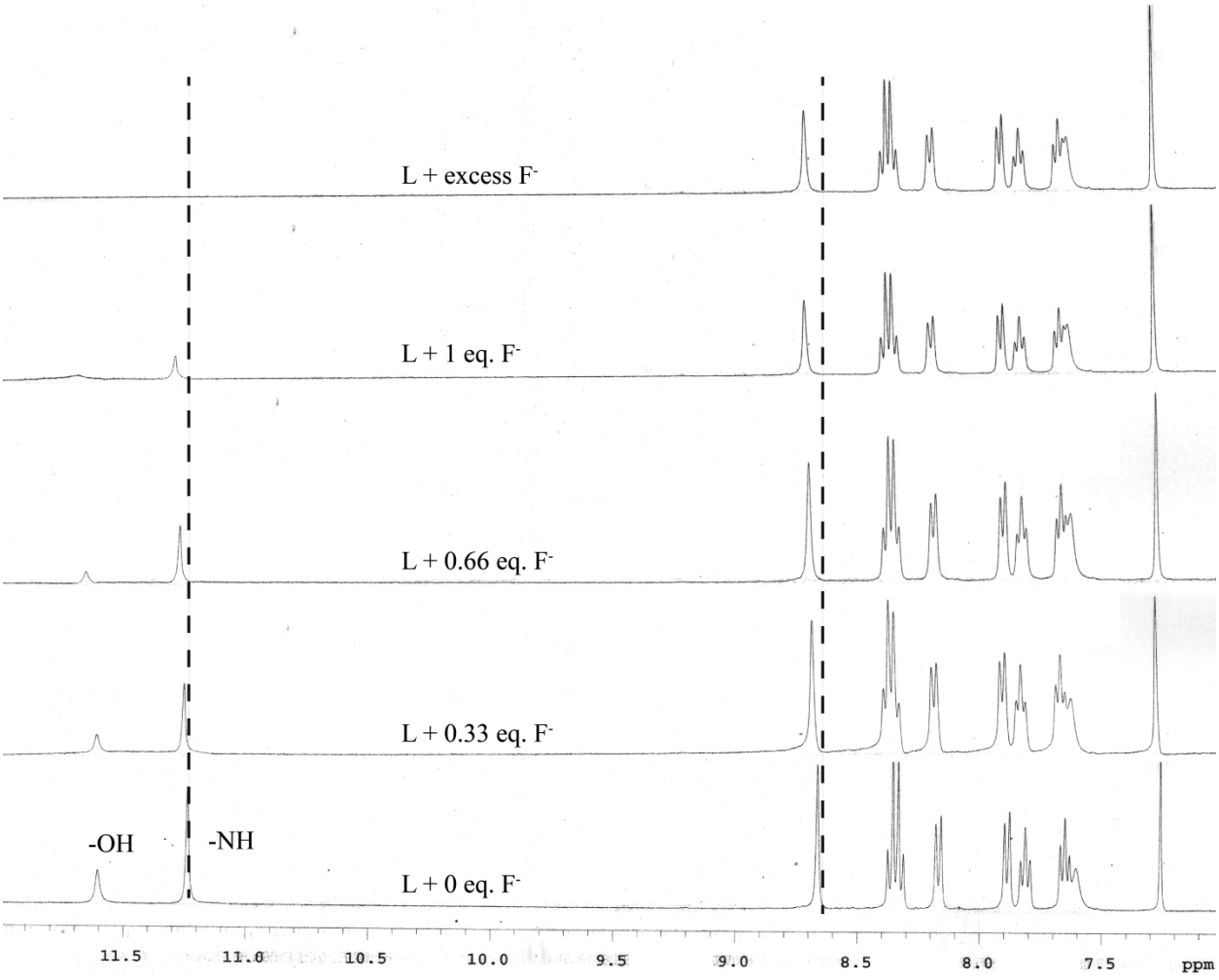

Fig. S19: ^{1}H-NMR titration spectras of **L** with F^- in $CDCl_3$.

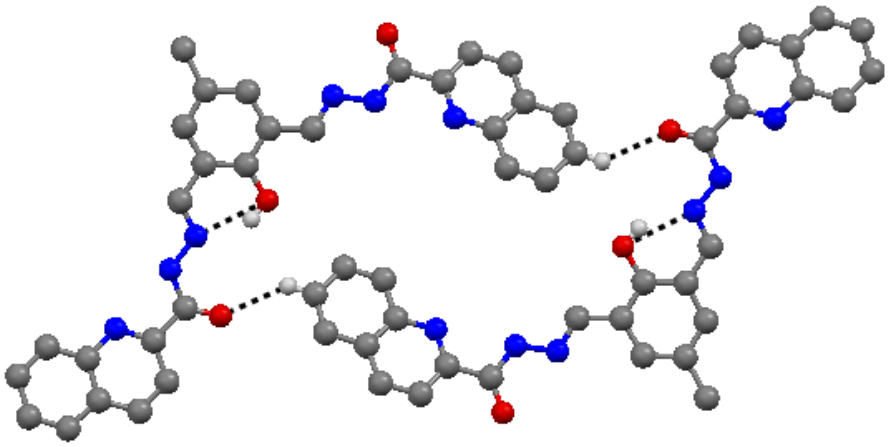

Fig. S20: Crystal structure of L and various interactions presents in it.