

Supplementary Material

A Highly Selective Chemosensor for Naked-Eye Detection of Fluoride and Aluminium(III) Ions Based on a New Schiff Base Derivative

Masoumeh Orojloo^A and Saeid Amani^{A,B}

^ADepartment of Chemistry, Faculty of Sciences, Arak University, Dr Beheshti Avenue, Arak 38156-8-8349, Iran.

^BCorresponding author. Email: s-amani@araku.ac.ir

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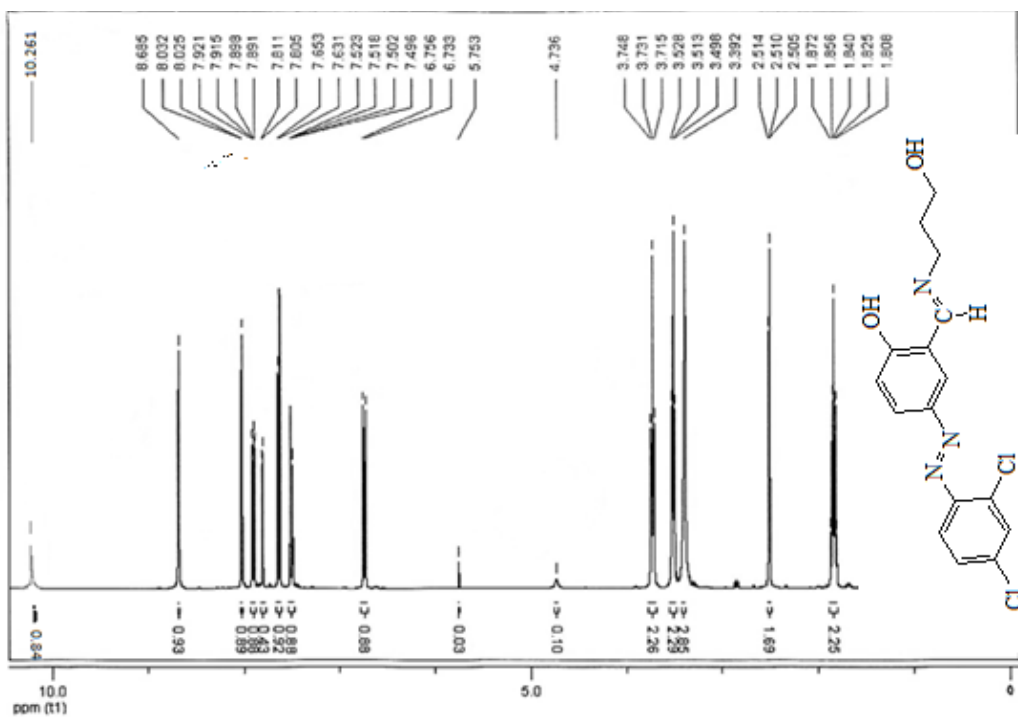


Fig. S1. ^1H NMR spectrum of L

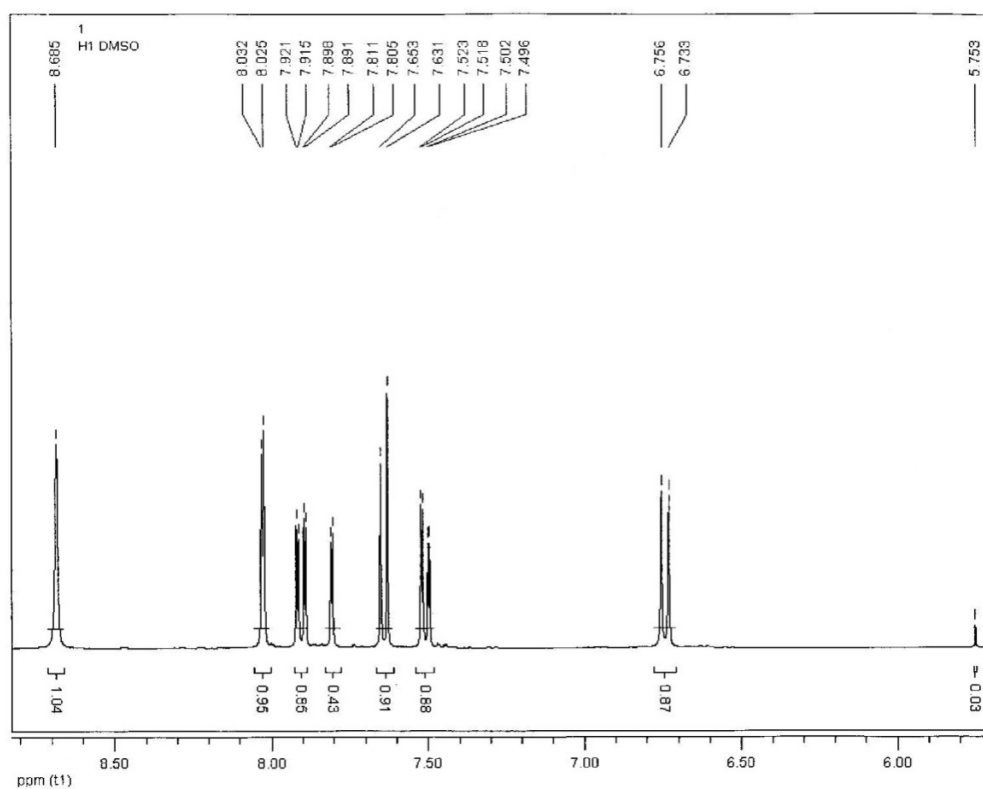


Fig. S2. The expand of ^1H NMR spectrum of L for aromatic region

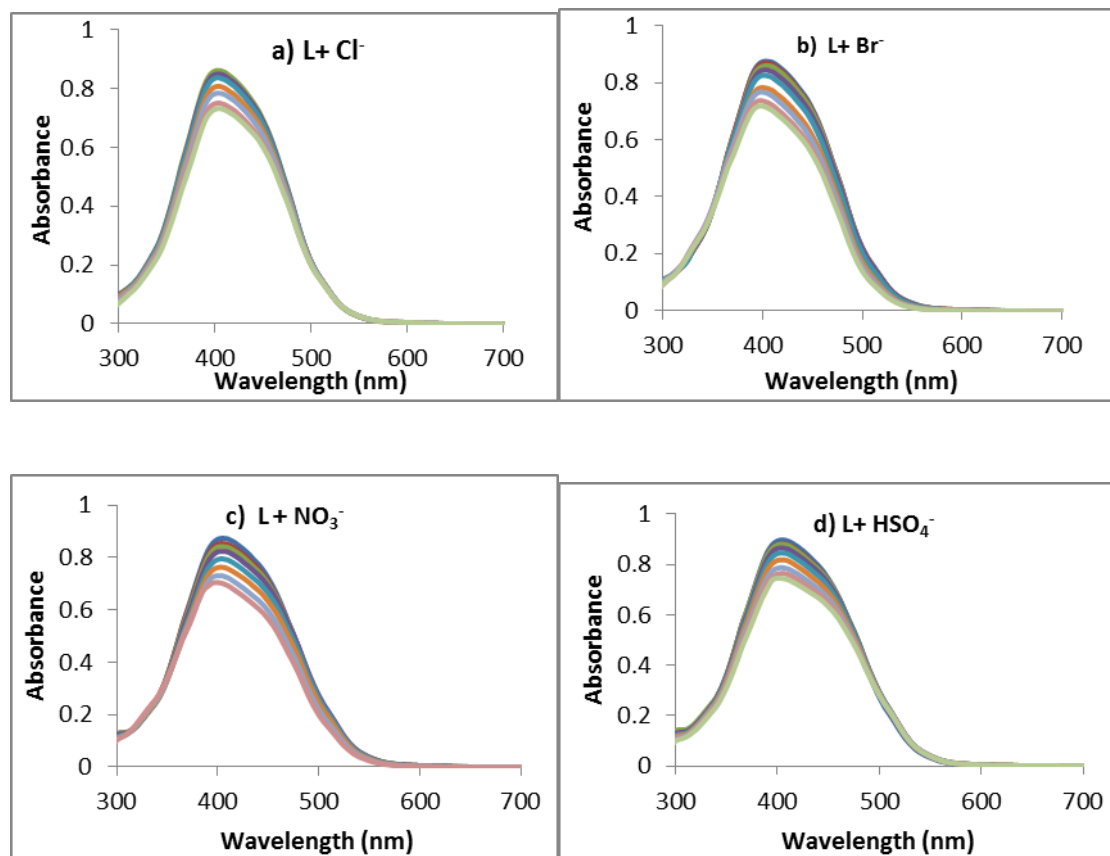


Fig. S3. (a-d). UV-Vis absorption spectra of sensor **L** (4×10^{-5} M in DMSO) in the presence of 0-5 equivalent of Cl^- , Br^- , NO_3^- , HSO_4^- as their TBA salts.

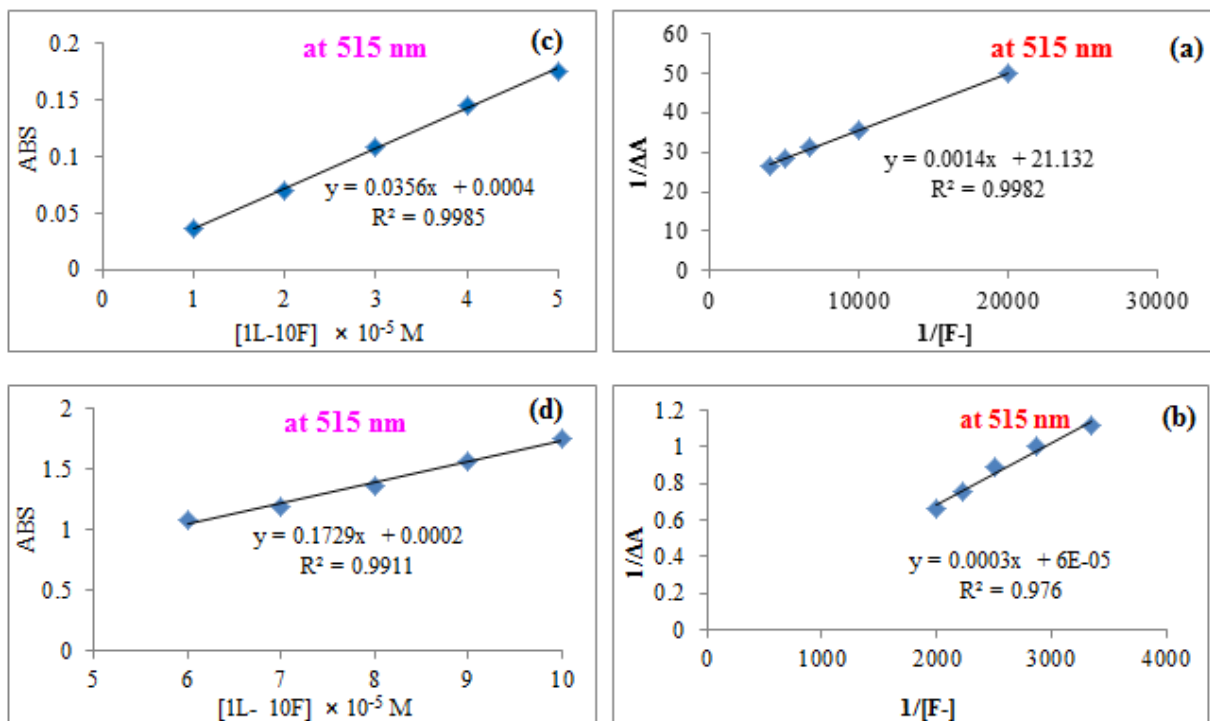


Fig. S4. (a-d) Benesi-Hildebrand plot (a, b) and calibration curve (c, d) for **L** with TBAF.

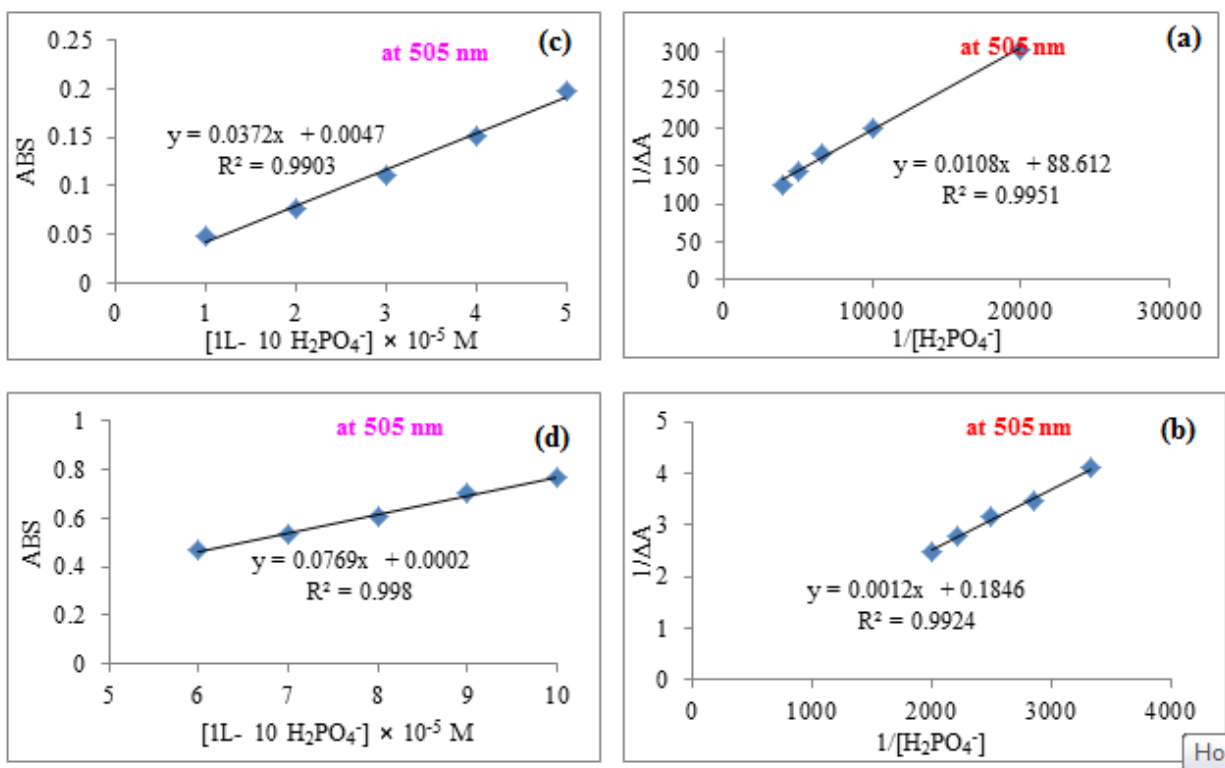


Fig. S5. (a-d) Benesi-Hildebrand plot (a, b) and Calibration curve (c, d) for **L** with $\text{TBAH}_2\text{PO}_4^{-1}$

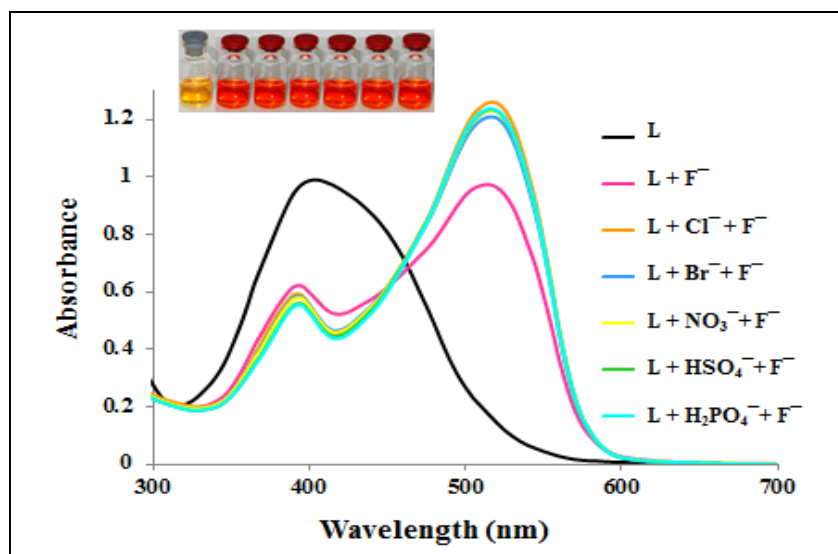


Fig. S6. Effect of competitive anions on the interaction between L and F⁻

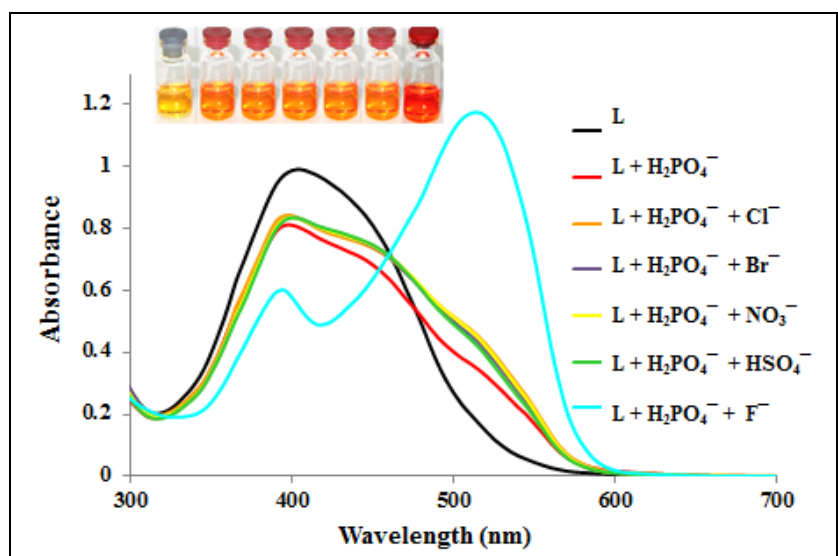


Fig. S7. Effect of competitive anions on the interaction between L and H₂PO₄⁻

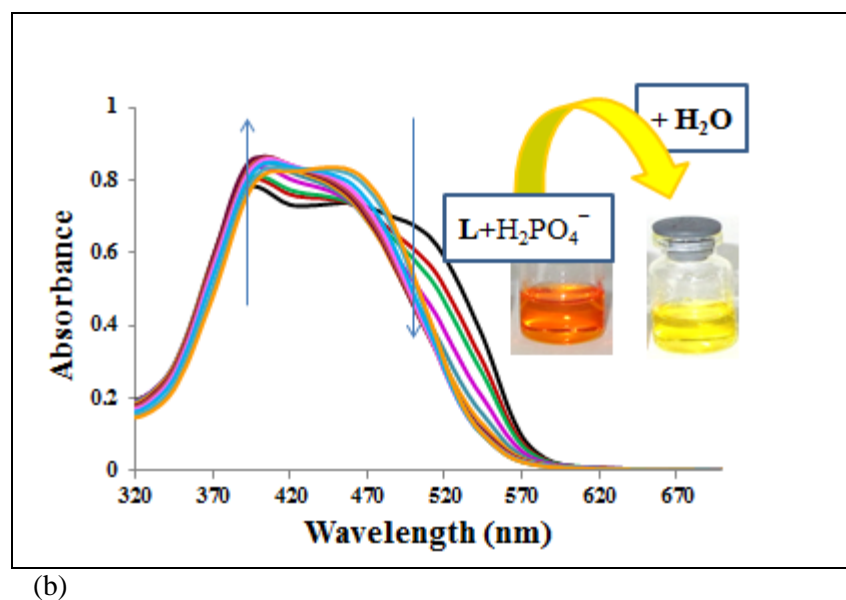
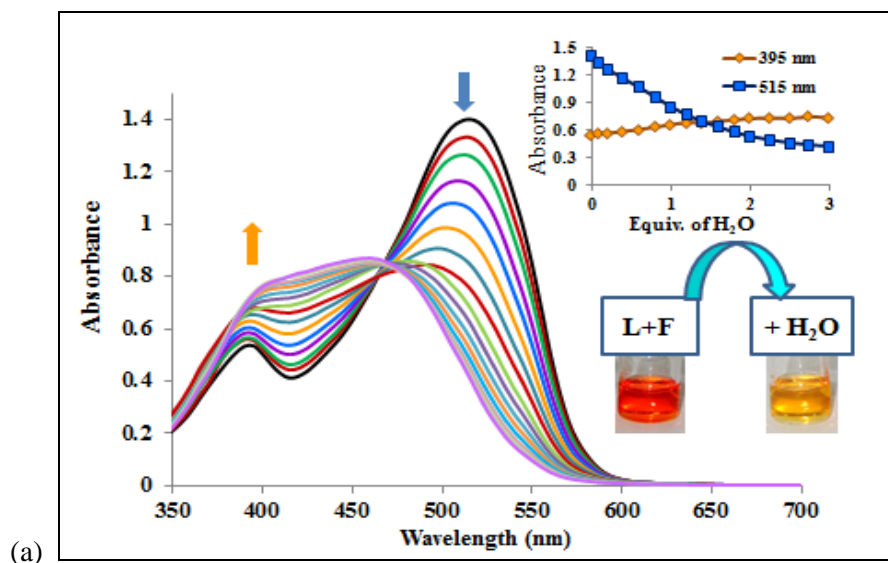


Fig. S8. UV-Vis titration of receptor (L) containing TBAF (a) and TBAH₂PO₄ (b) with H₂O

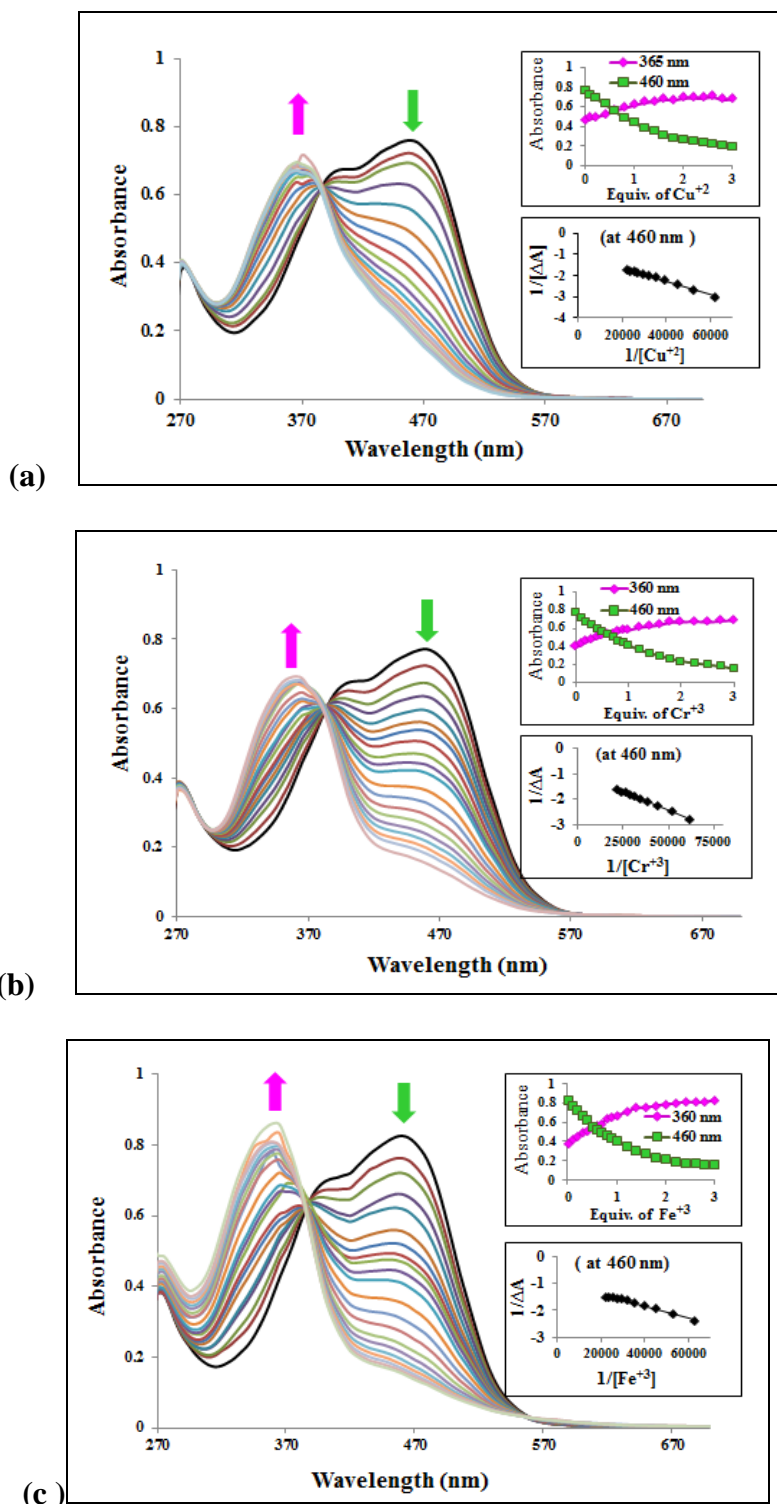


Fig. S 9 (a, b, c) Absorption spectra changes of **L** (4×10^{-5} M) after addition of increasing amounts of Cu^{2+} , Cr^{3+} and Fe^{3+} ions (0-3 equivalent) in 9:1 DMSO/water at room temperature. Insets: Absorption at selected wavelengths versus the number of equivalents of cations added. Benesi-Hildebrand plot of **L** for mentioned cations in DMSO-water (9:1).

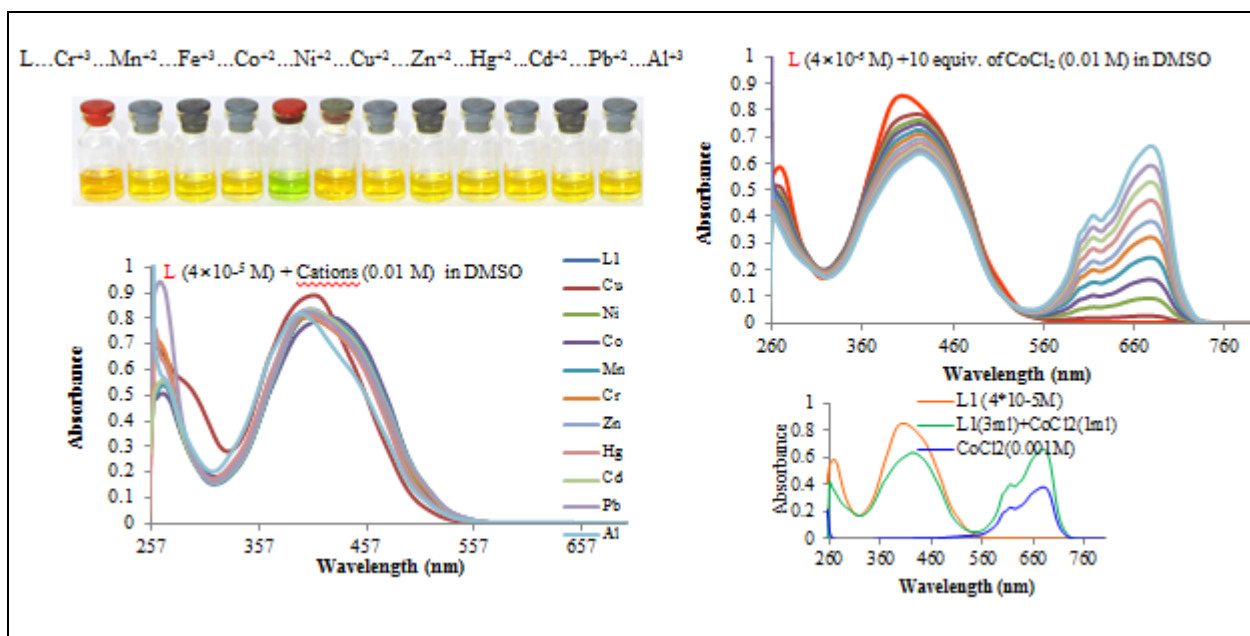


Fig. S10. UV-Vis absorption spectra and Color changes of sensor L (4×10^{-5} M in DMSO) after addition of 3 equiv. of different cations. From left to right: free L, Cr^{+3} , Mn^{+2} , Fe^{+3} , Co^{+2} , Ni^{+2} , Cu^{+2} , Zn^{+2} , Hg^{+2} , Cd^{+2} , Pb^{+2} , Al^{+3} .

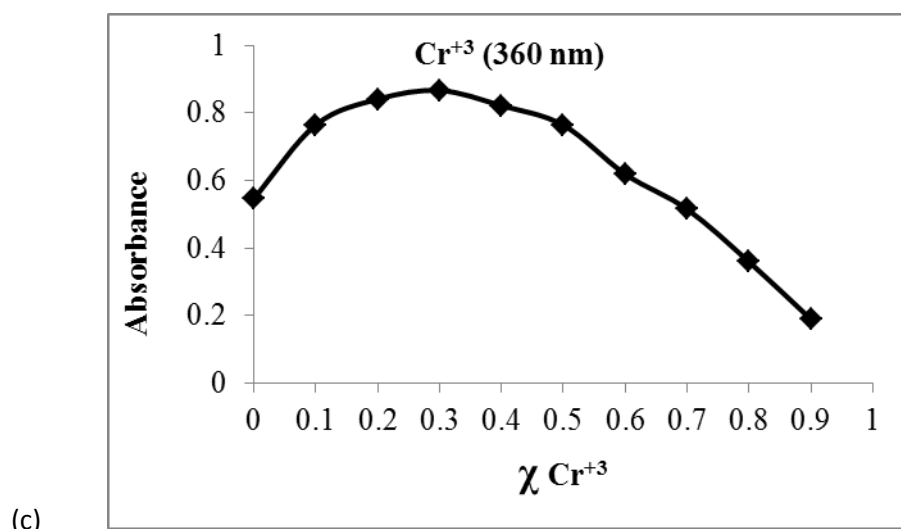
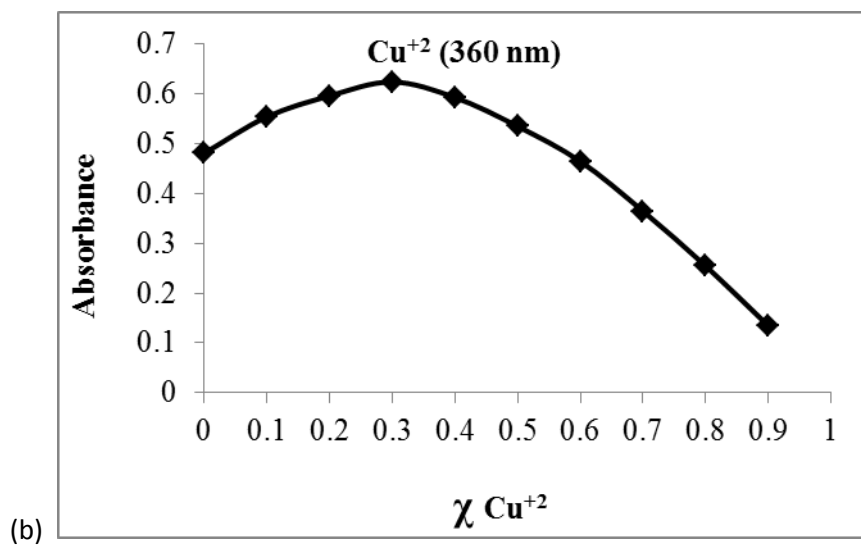
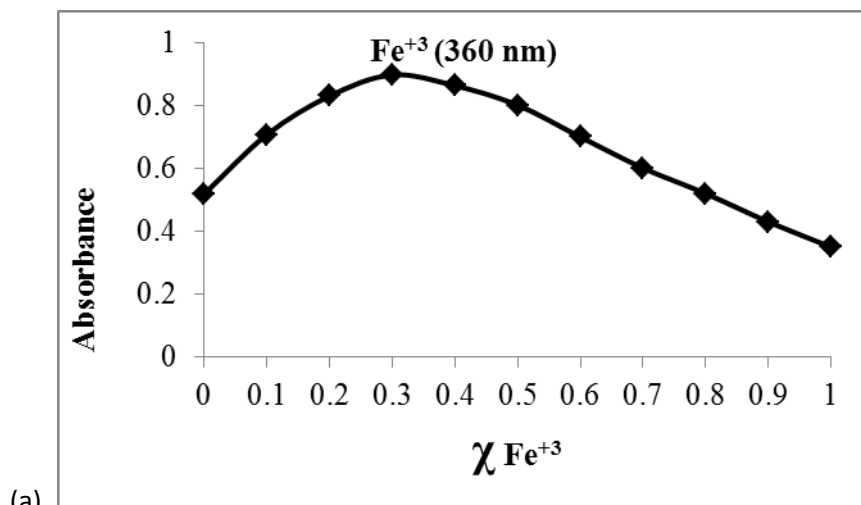
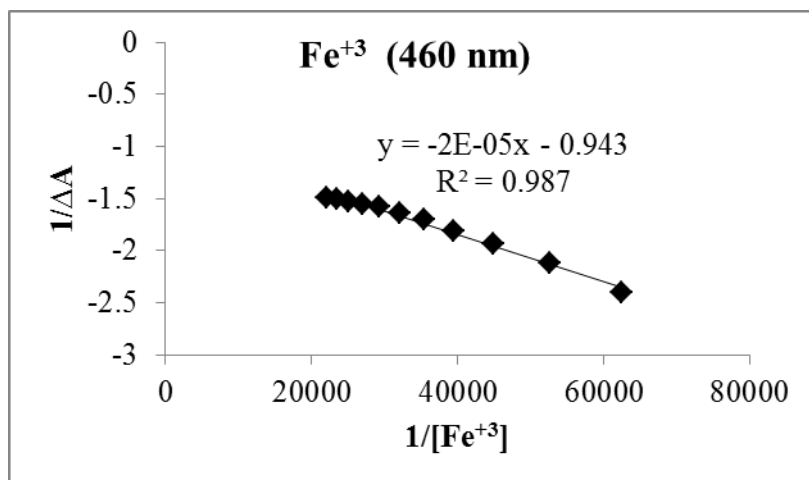
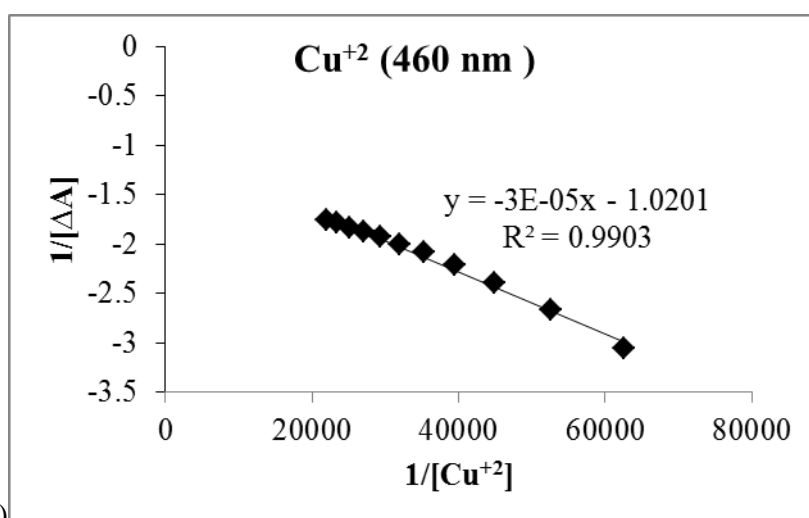


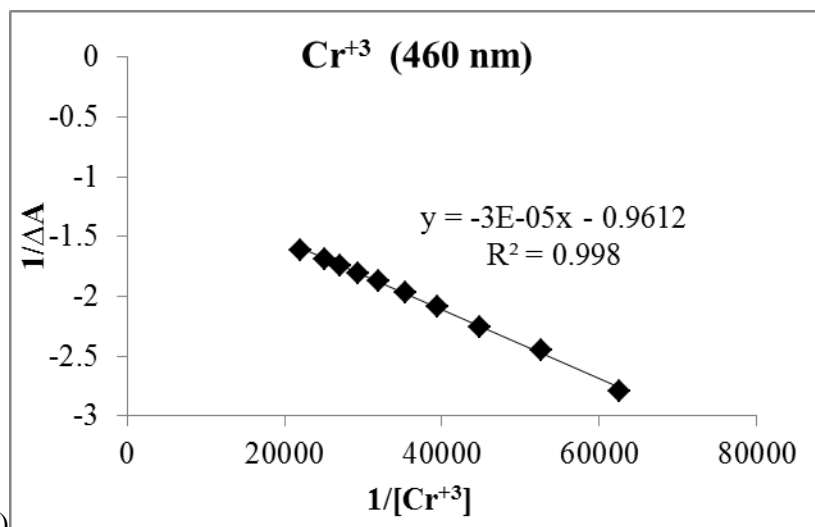
Fig. S11. Job's plot for 2: 1 complex of L with Fe³⁺, Cu²⁺, Cr³⁺



(a)



(b)



(c)

Fig. S12 Benesi-Hildebrand plot for **L** with Fe³⁺, Cu²⁺, Cr³⁺