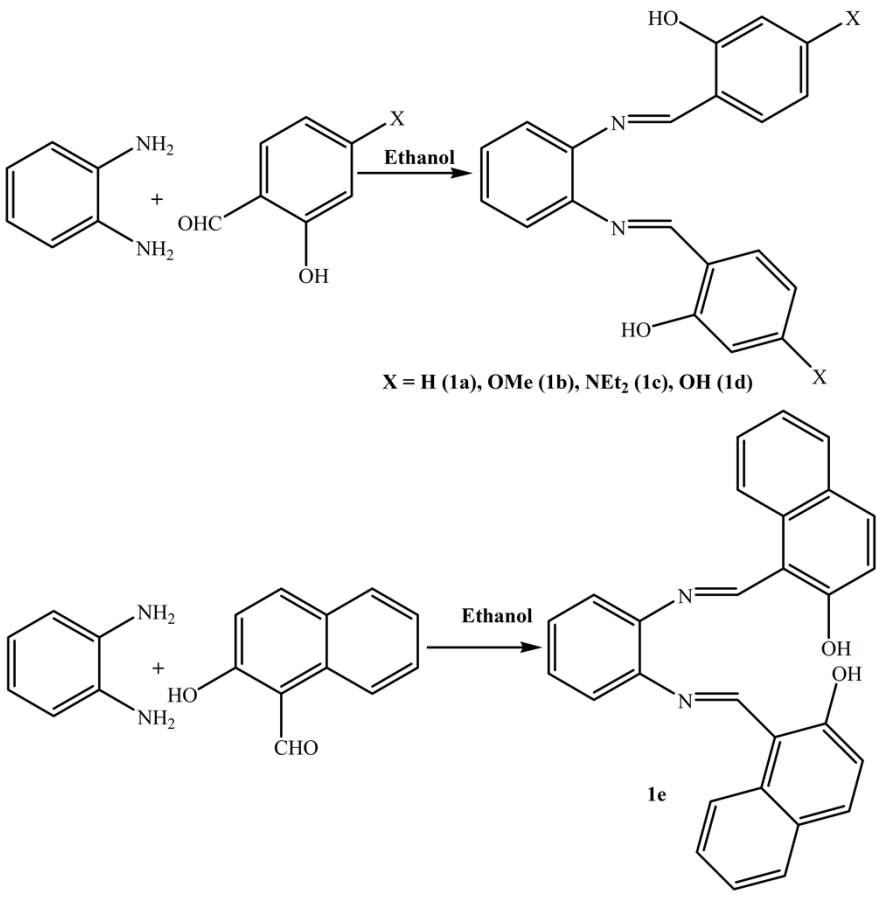
Electronic Supplementary Material (ESI) for RSC Advances.

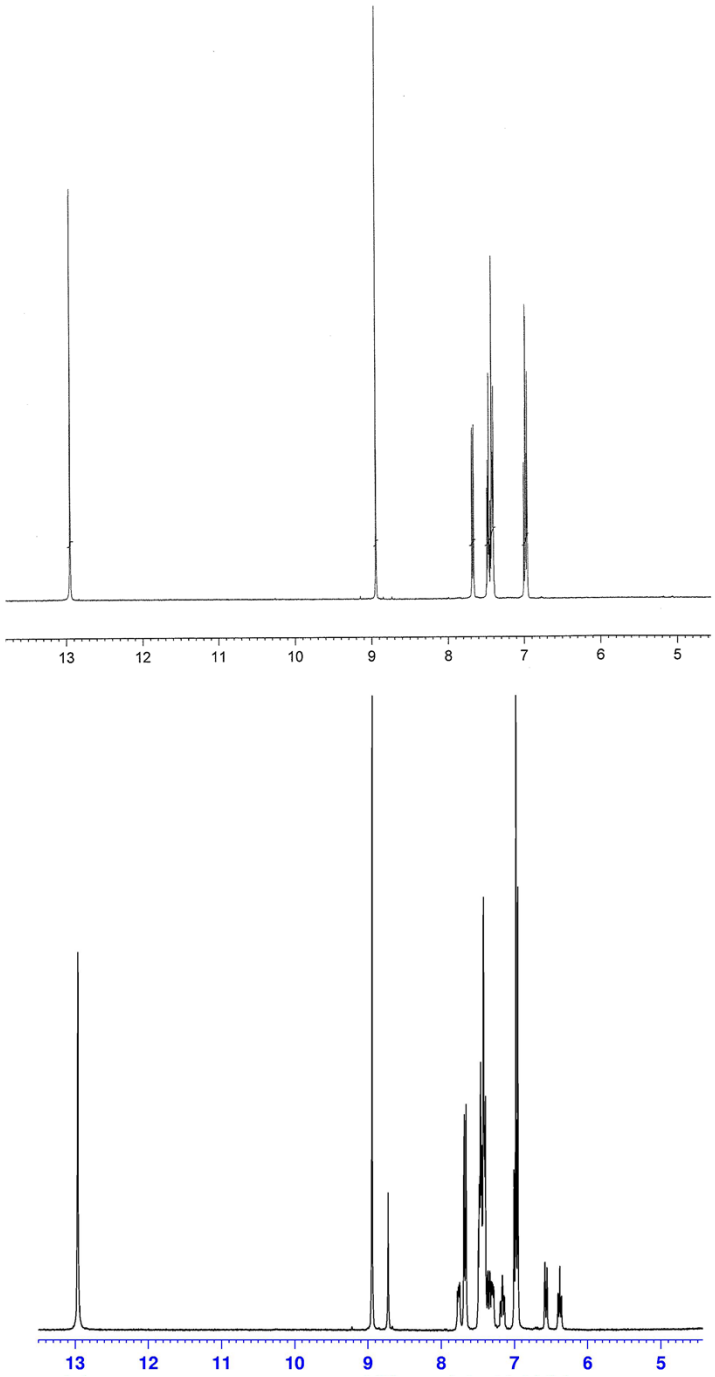
Selective fluorescence sensing of Mg^{2+} ions by Schiff base chemosensor: Effect of diamine structural rigidity and solvent

P. S. Hariharan and Savarimuthu Philip Anthony*

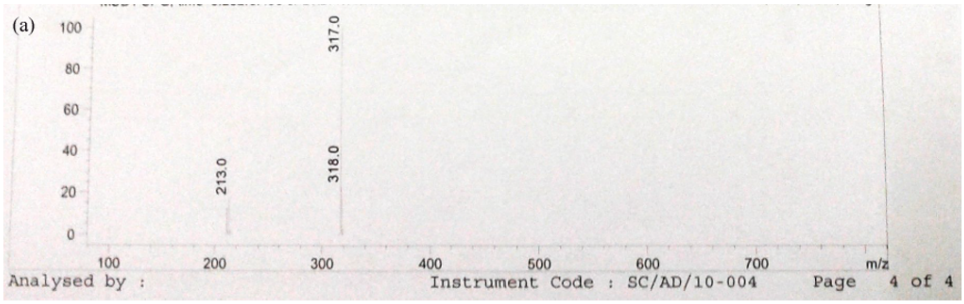
School of Chemical & Biotechnology, SASTRA University, Thanjavur-613401, Tamil Nadu, India. Fax: +914362264120; Tel: +914362264101; E-mail: philip@biotech.sastra.edu

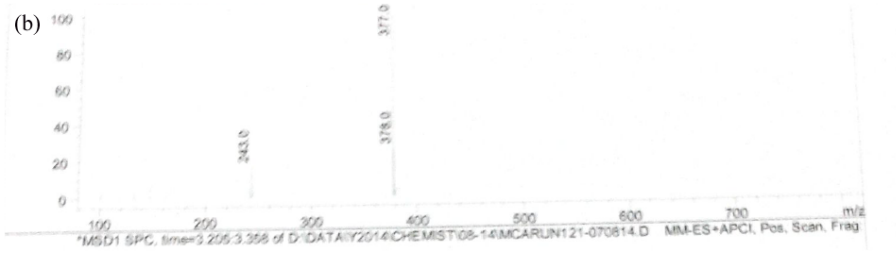


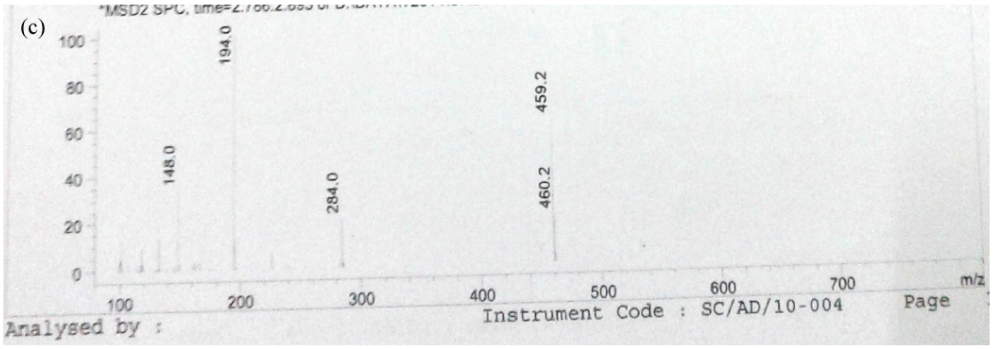
Scheme S1. Synthesis of Schiff base chemosensor based on 1,2-phenylenediamine.

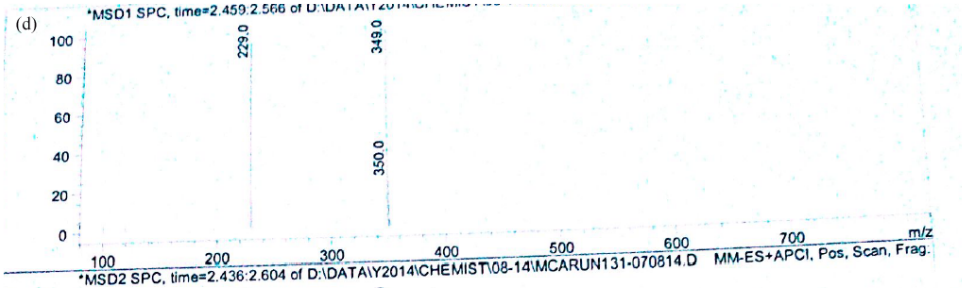


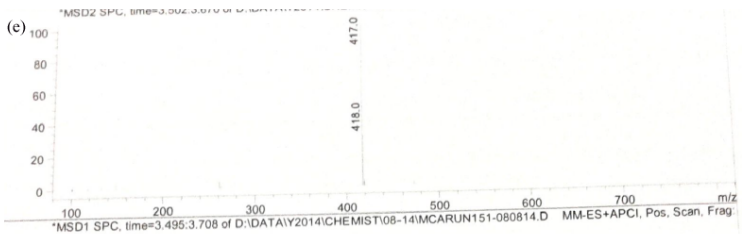
^{1}H-NMR spectra of 1a (a) and 1a+Mg^{2+} (b) in d_6-DMSO.











Mass spectra of 1a (a), 1b (b), 1c (c), 1d (d) and 1e (e).

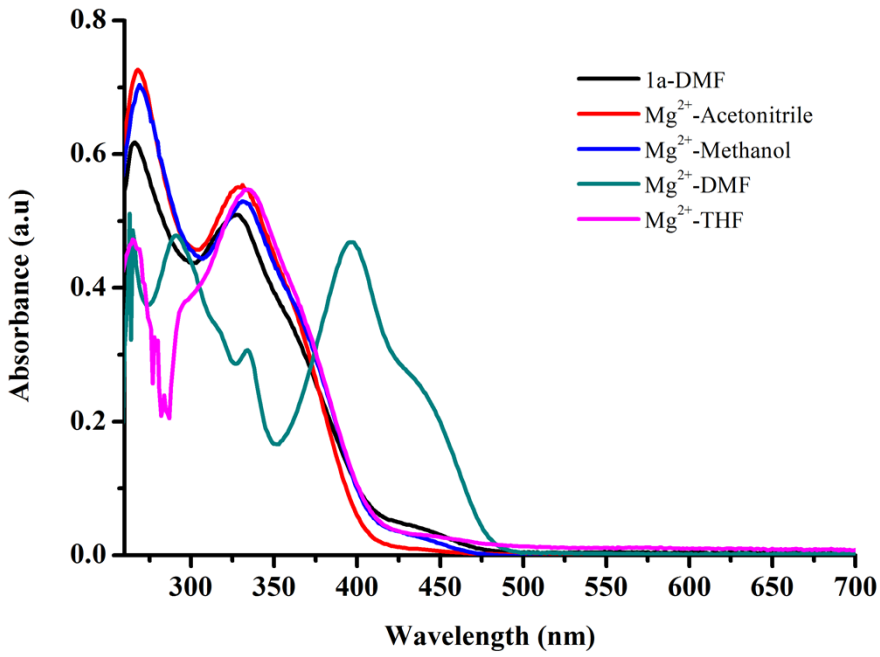


Figure S1. Absorption of 1a in DMF and 1a with Mg^{2+} in different solvents.

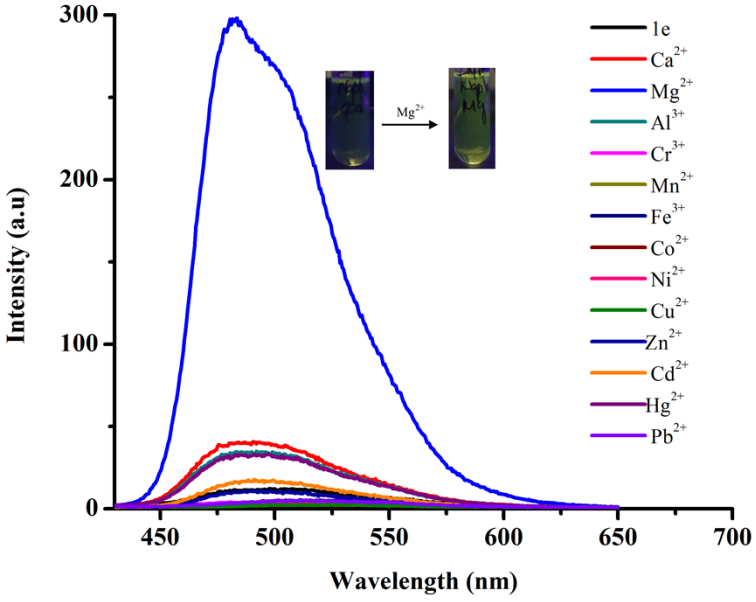


Figure S2a. 1e turn-on fluorescence for Mg^{2+} in DMF.

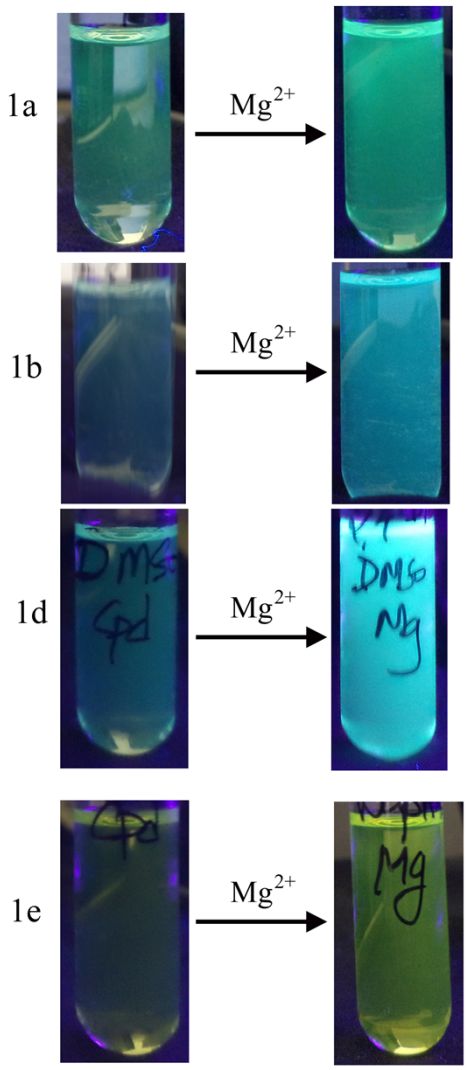


Figure S2b. Mg^{2+} selective fluorescence sensing of Schiff base chemosensors (1a-1e) in DMSO.

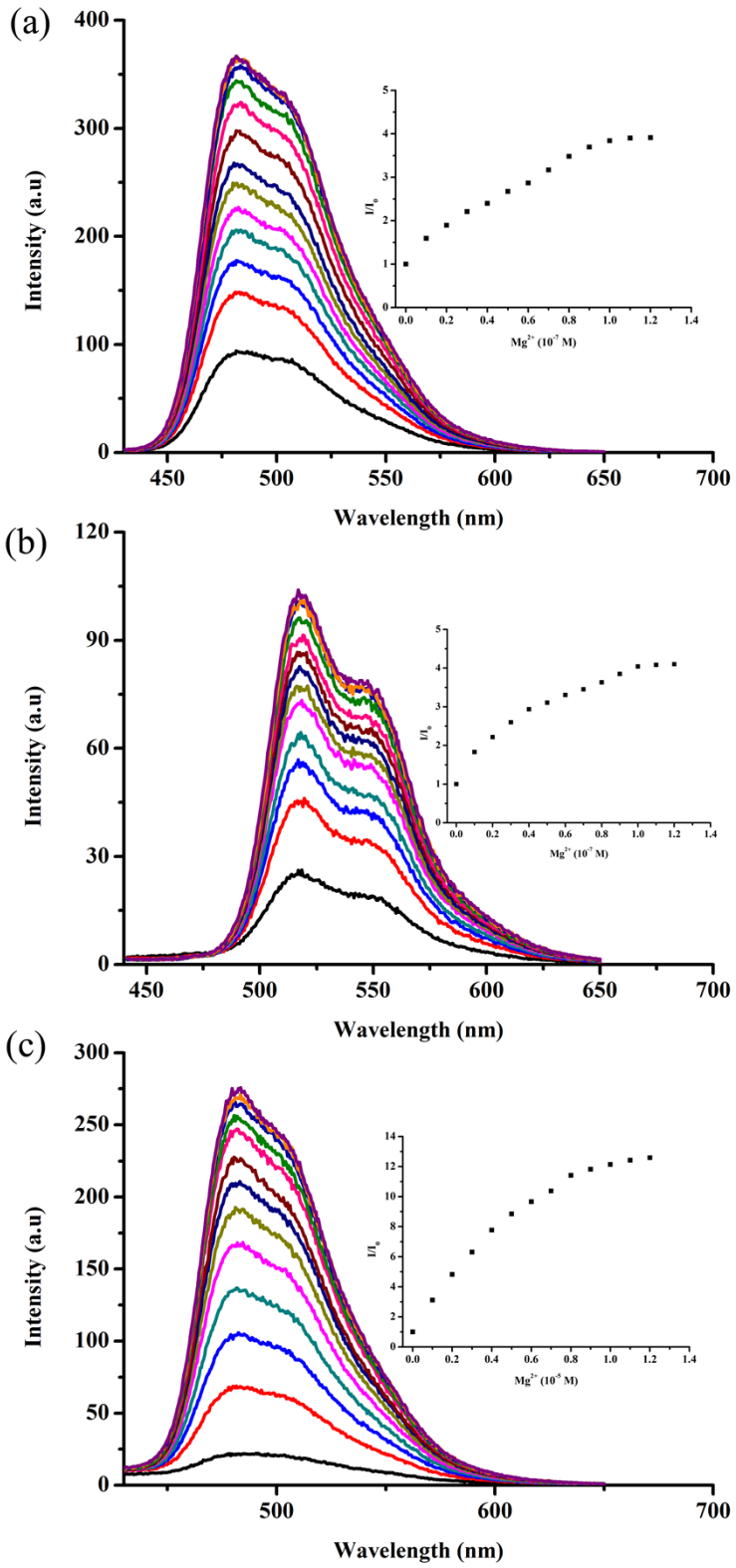


Figure S3. (a) 1b, (b) 1d and (c) 1e fluorescence change Vs Mg^{2+} concentration in DMF.

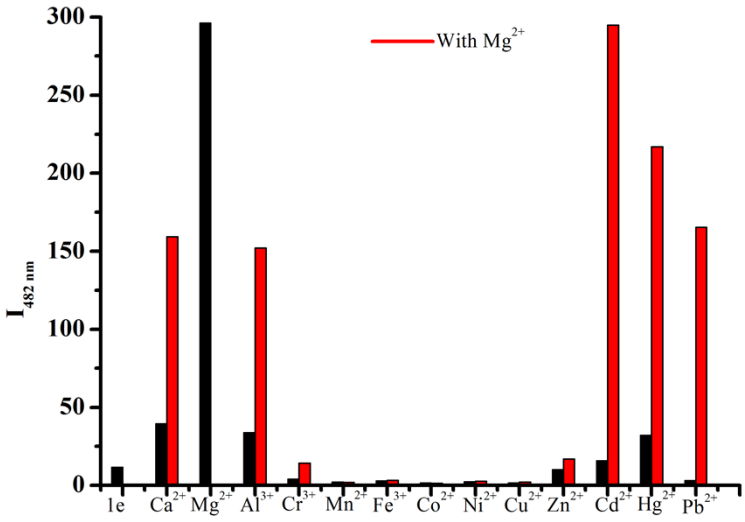
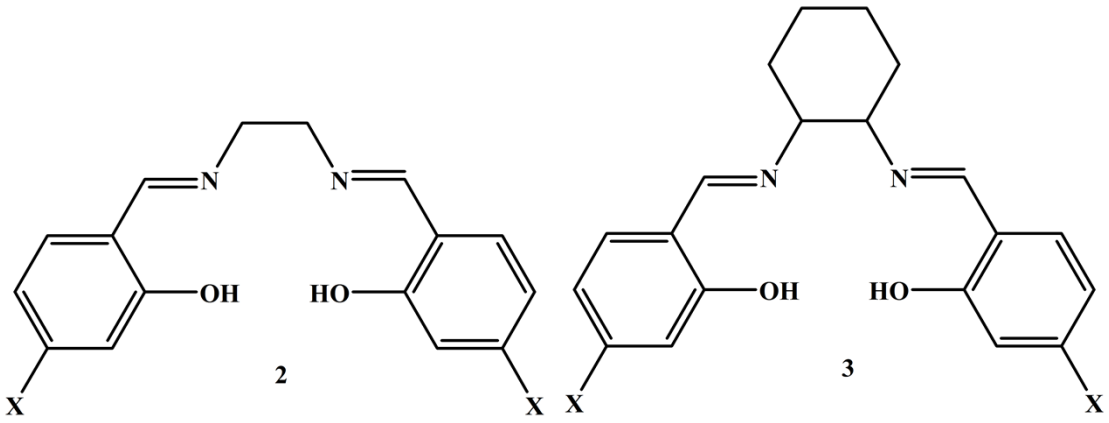


Figure S4. Selectivity studies of 1e for Mg^{2+} in presence of other metal cations in DMF.



X = H (2a), OCH_3 (2b), NEt_2 (2c), OH (2d) **X = H (3a), OCH_3 (3b), NEt_2 (3c), OH (3d)**

Scheme S2. Ethylene diamine and cyclohexane diamine based Schiff base chemosensors.

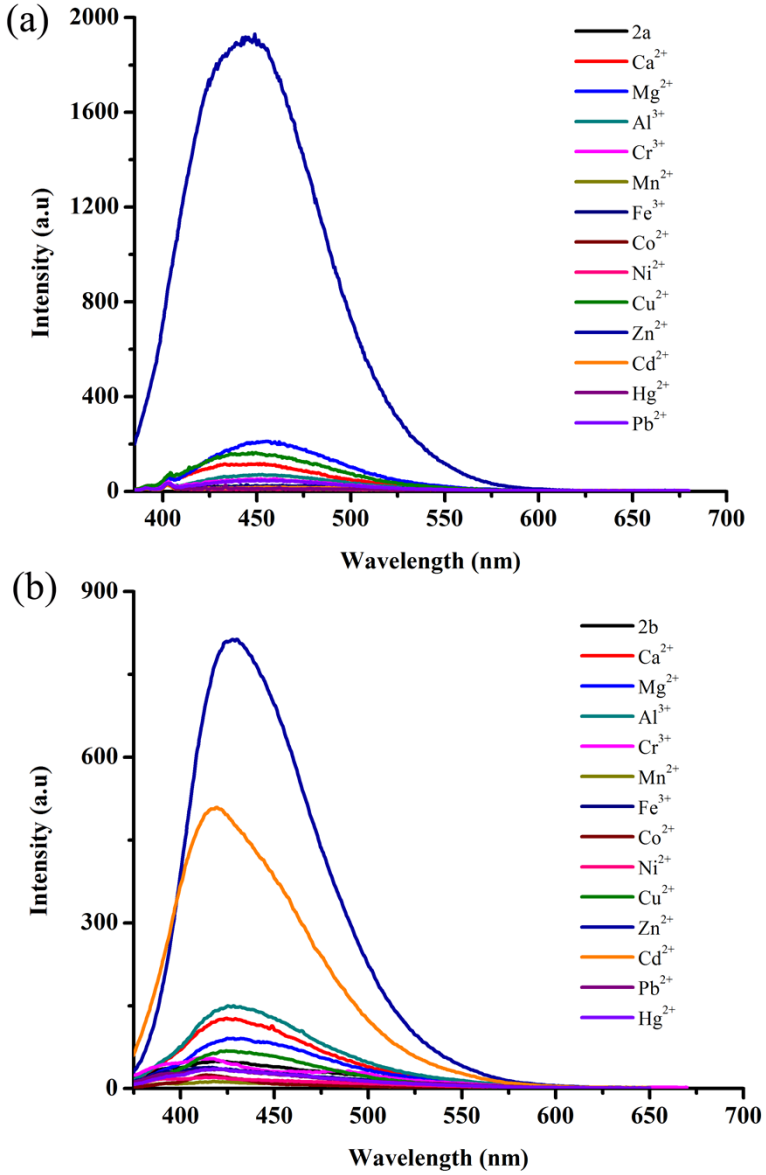


Figure S5. (a) 1a and (b) 1b fluorescence spectra with different metal ions.

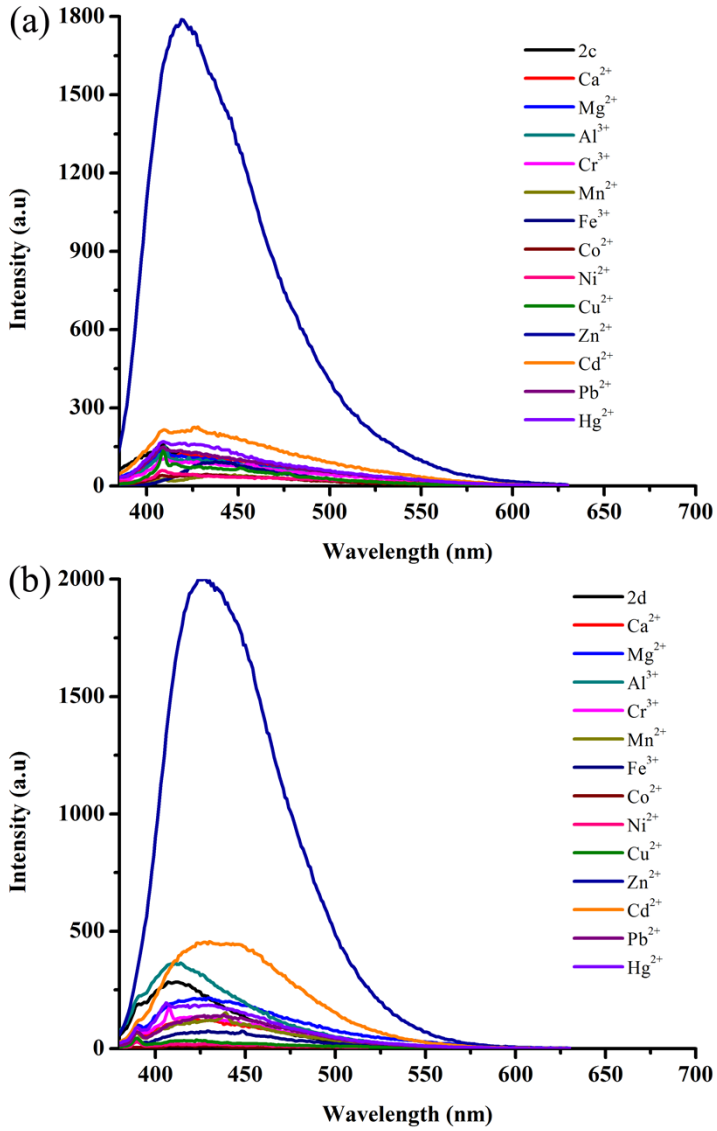


Figure S6. Figure S5. (a) 1c and (b) 1d fluorescence spectra with different metal ions.

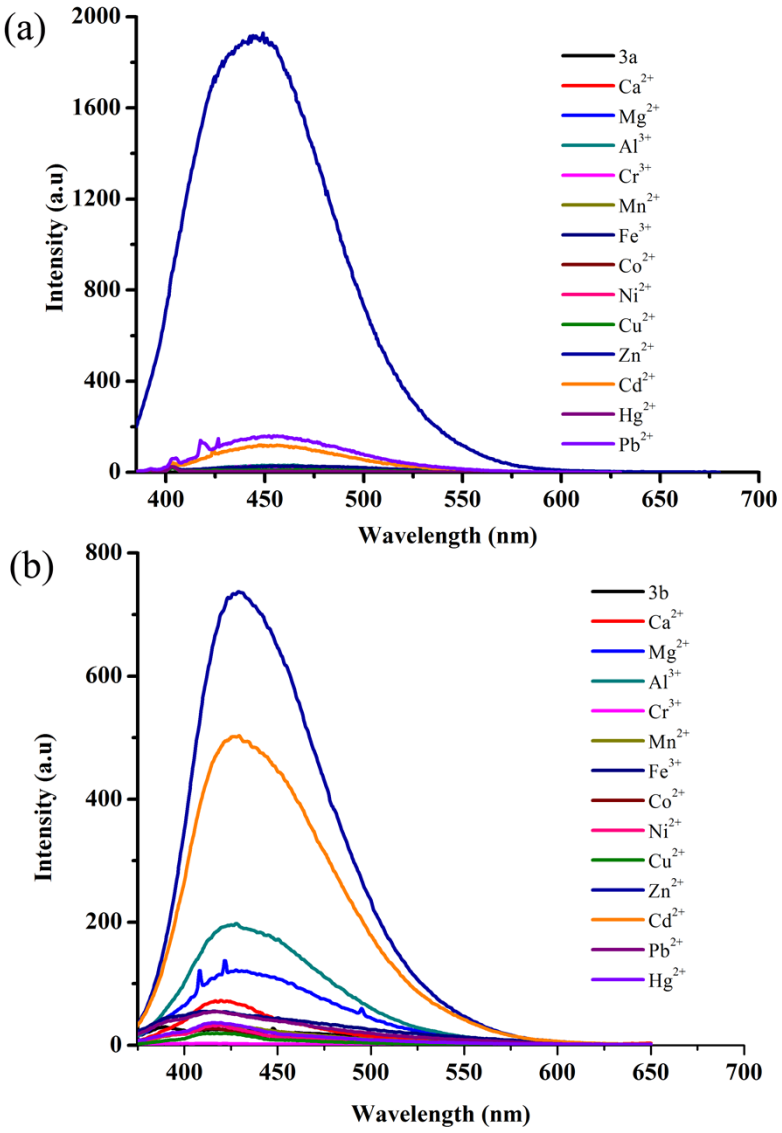


Figure S7. (a) 2a and (b) 2b fluorescence spectra with different metal ions.

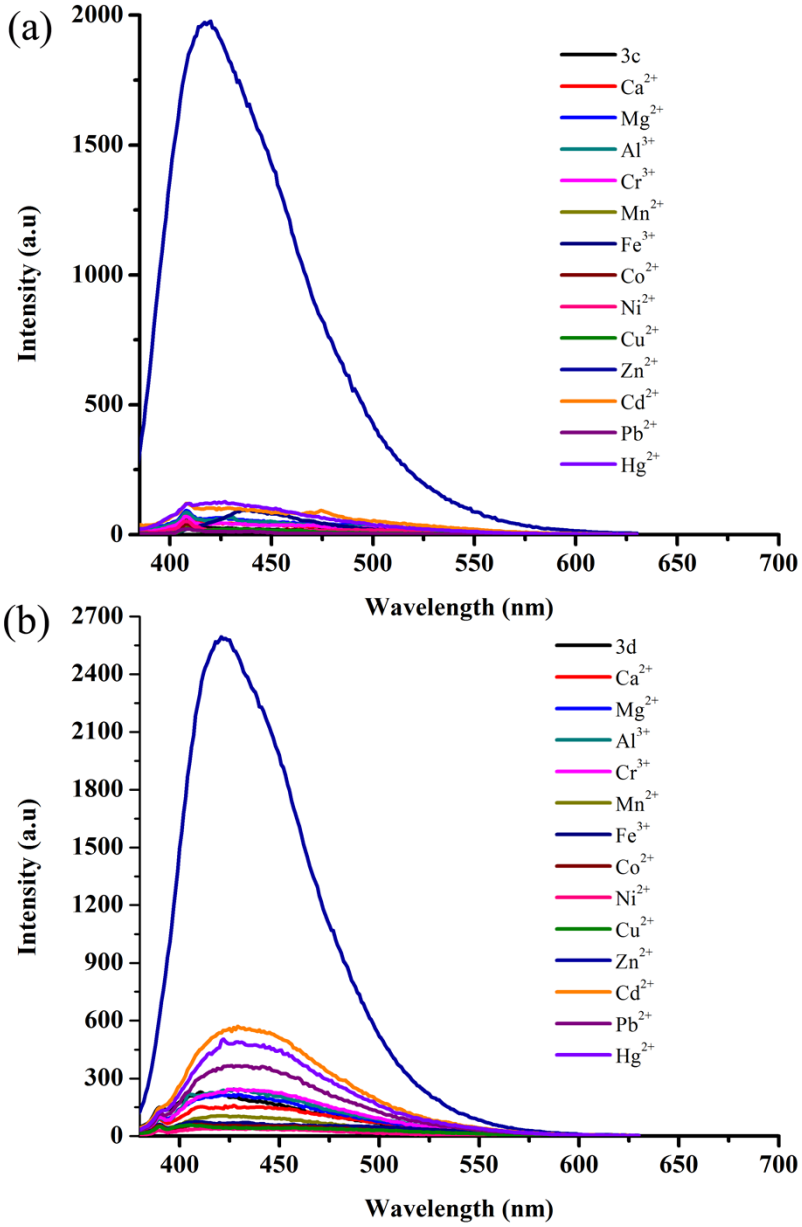


Figure S8. (a) 2c and (b) 2d fluorescence spectra with different metal ions.

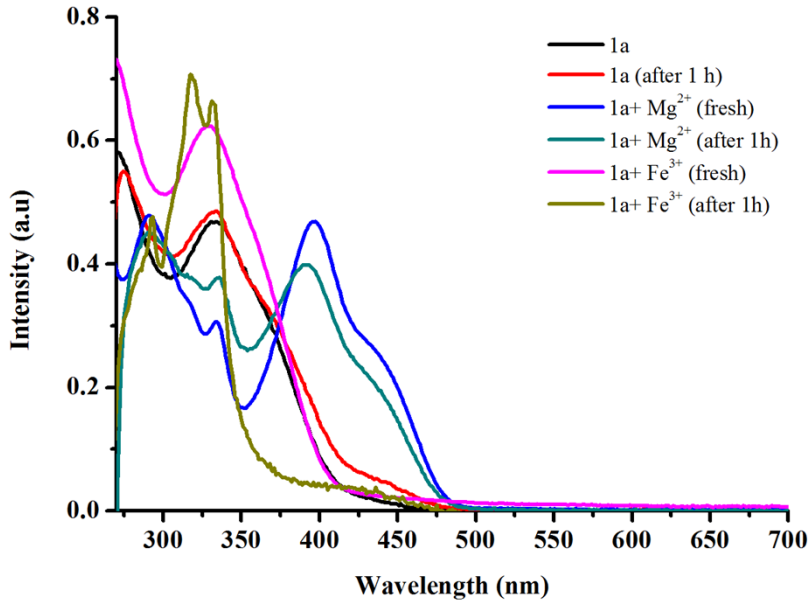


Figure S9. Change of 1a absorption in DMF with Mg^{2+} and Fe^{3+} with time.

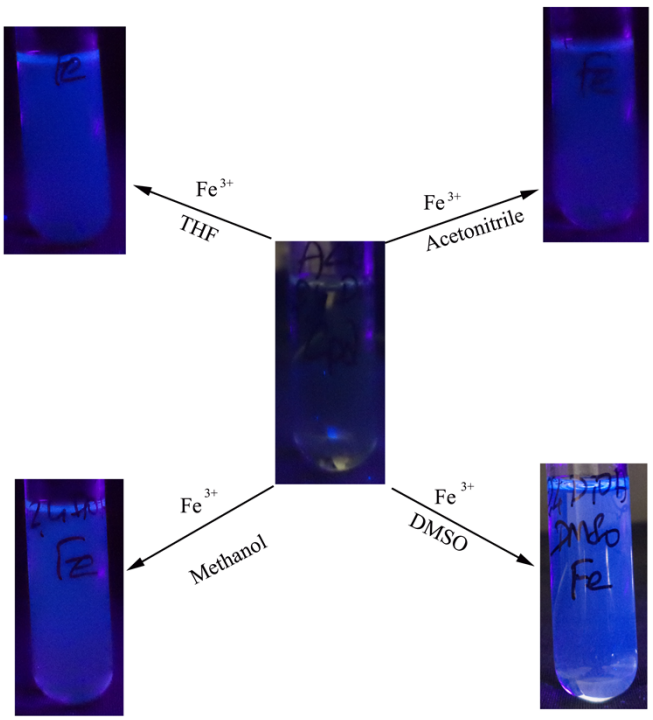


Figure S10. Digital images of 1a turn-on fluorescence for Fe^{3+} in different solvent. 1b, 1d-e also exhibited similar fluorescence turn-on for Fe^{3+} in different solvents.