Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

A quinoline-functionalized amphiphilic fluorogenic probe for specific detection of trivalent cations

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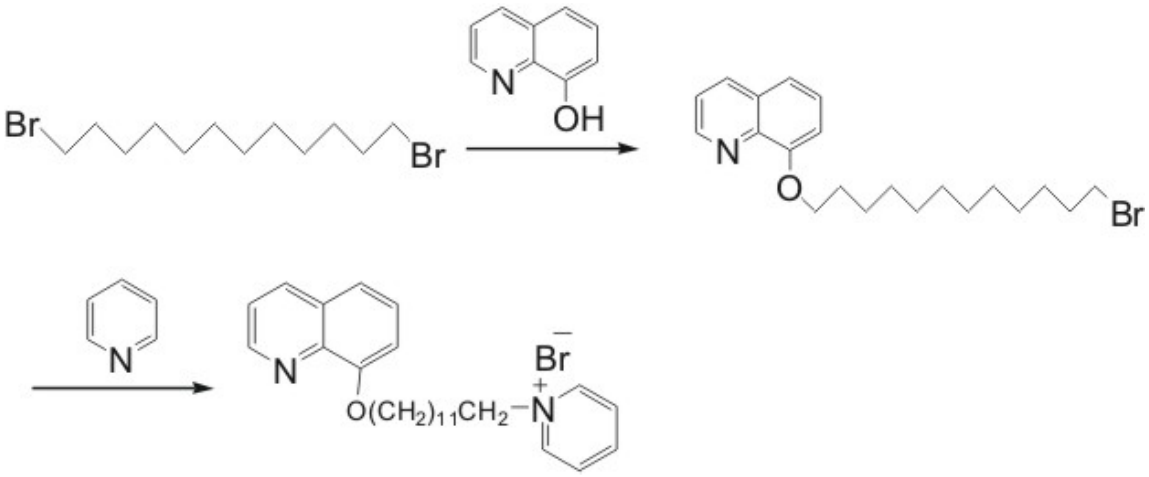


Scheme 1 Synthetic routes to 1

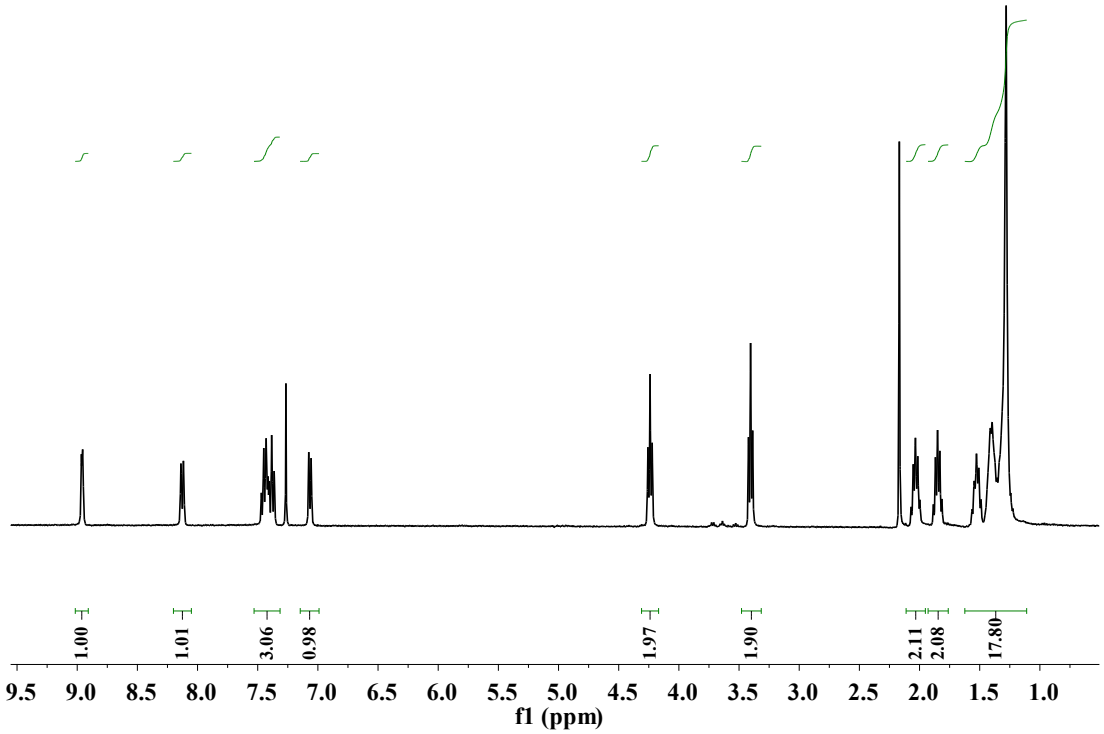


Fig. S1 ^{1}H NMR spectra of $QC_{12}Br$ in $CDCl_3$.

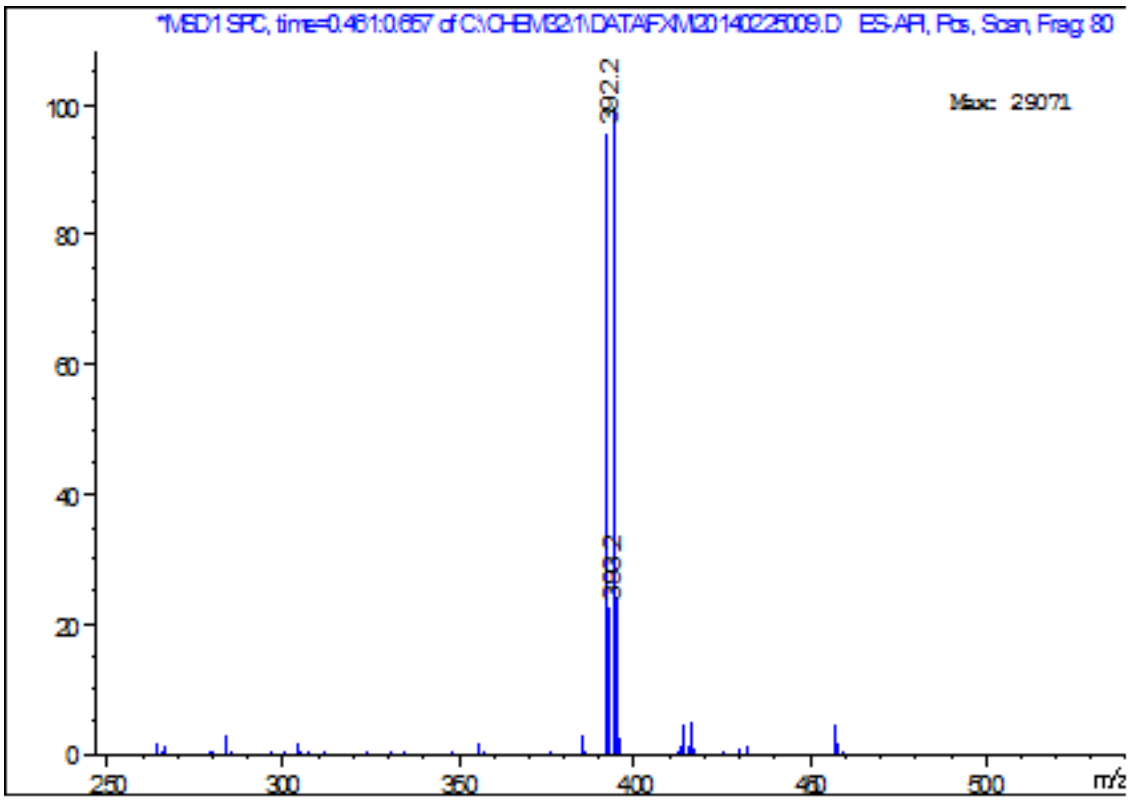


Fig. S2 MS spectrum of $QC_{12}Br$.

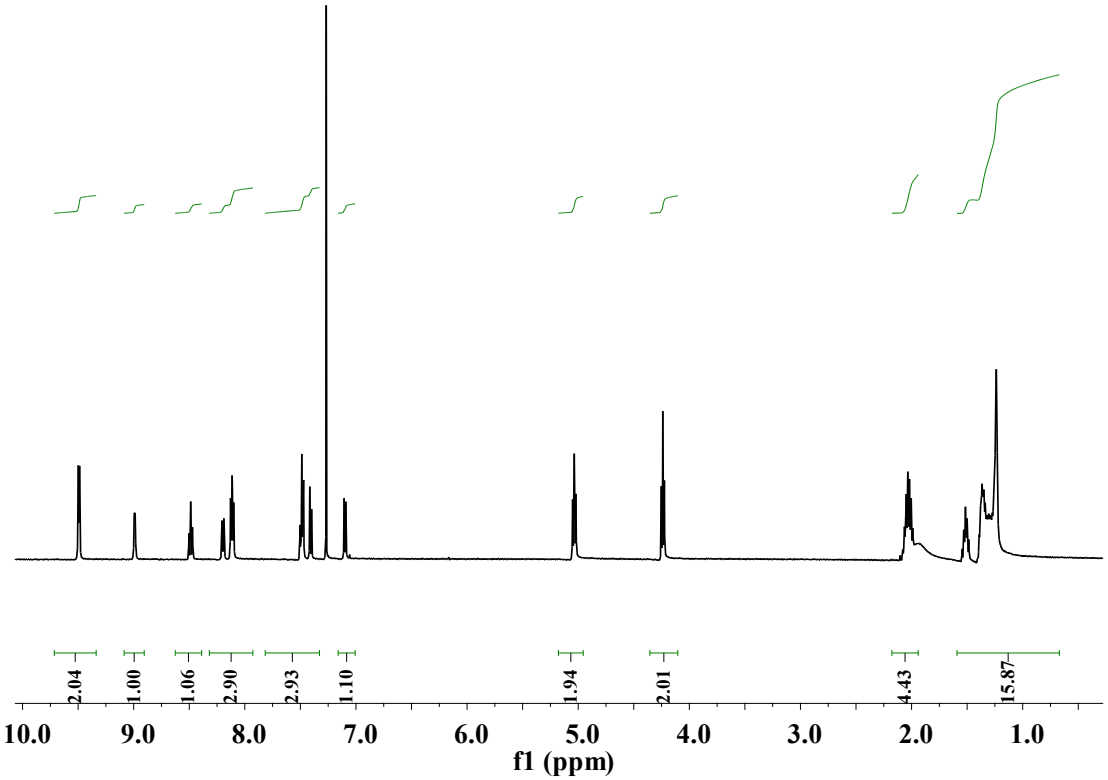


Fig. S3 ^{1}H NMR spectra of $QC_{12}PyBr$ in $CDCl_3$.

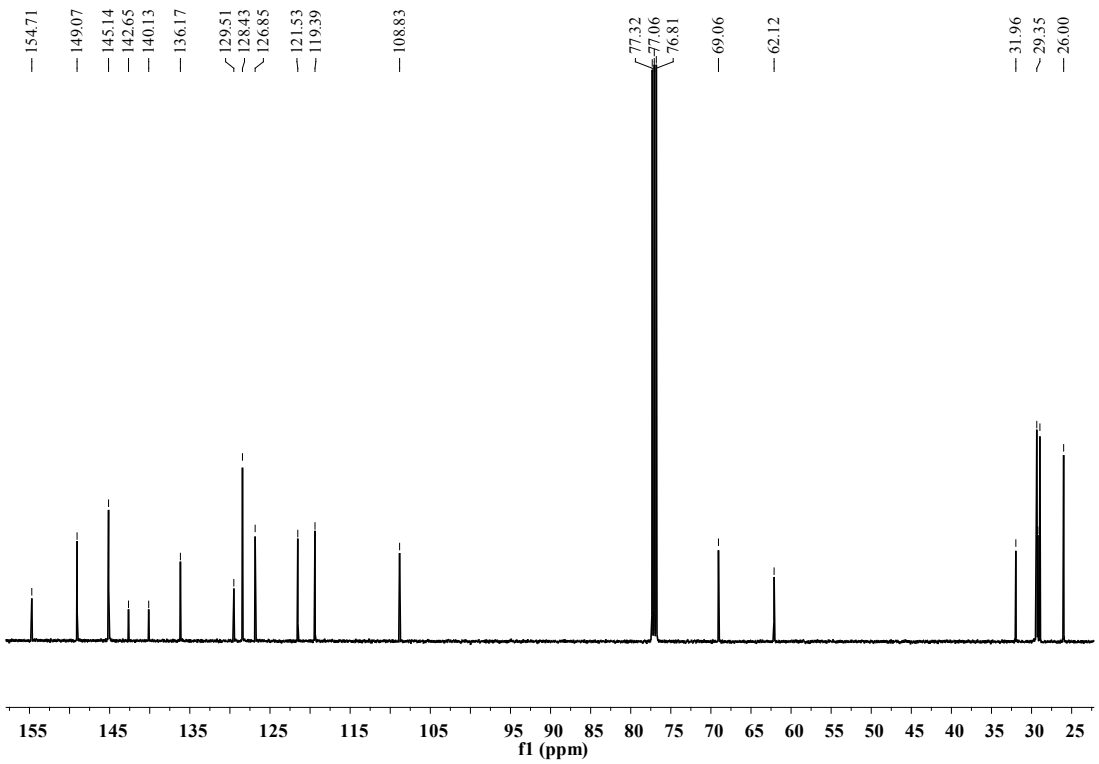


Fig. S4 ^{13}C NMR spectra of $QC_{12}PyBr$ in $CDCl_3$.

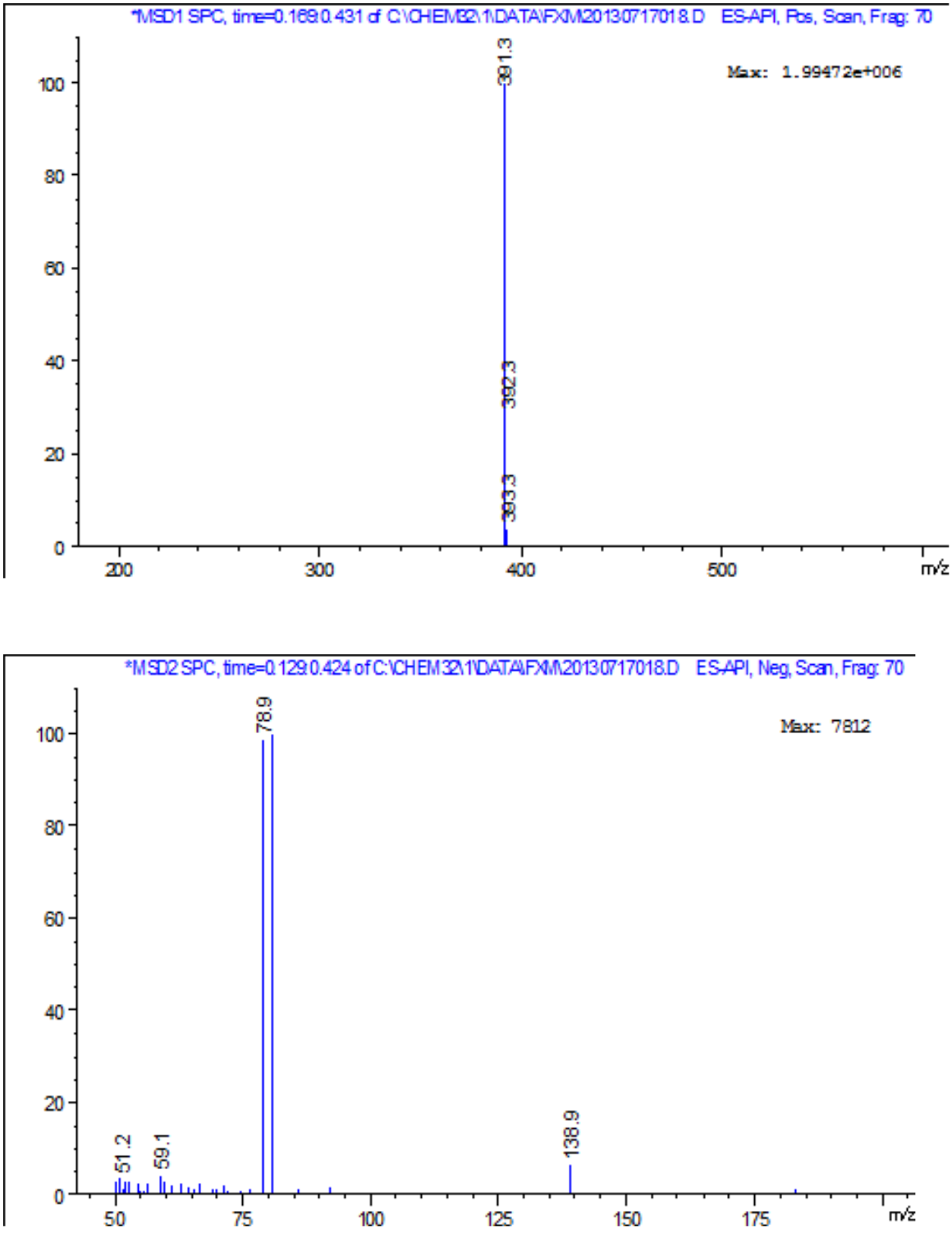


Fig. S5 MS spectrum of $QC_{12}PyBr$.

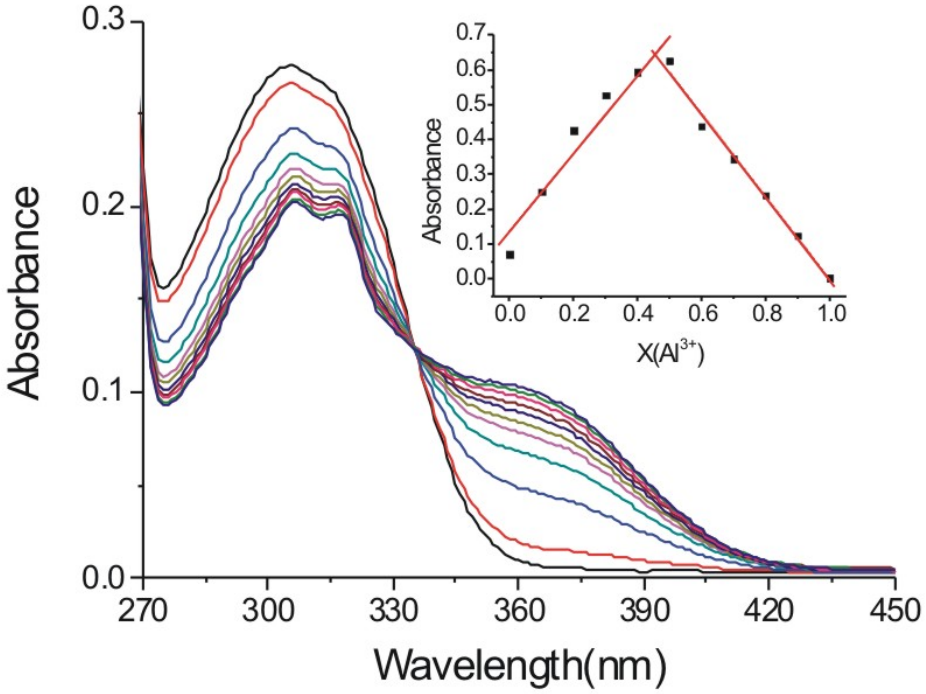


Fig. S6 Adsorption spectra of 1 (10^{-4} M) in water when titrated with Al^{3+} (0, 2, 4, 6, 8, 10, 12,14,16,18, 20 μL). Inset: Job's plot of 1 and Al^{3+} in the same medium according to the absorbance at 365 nm.

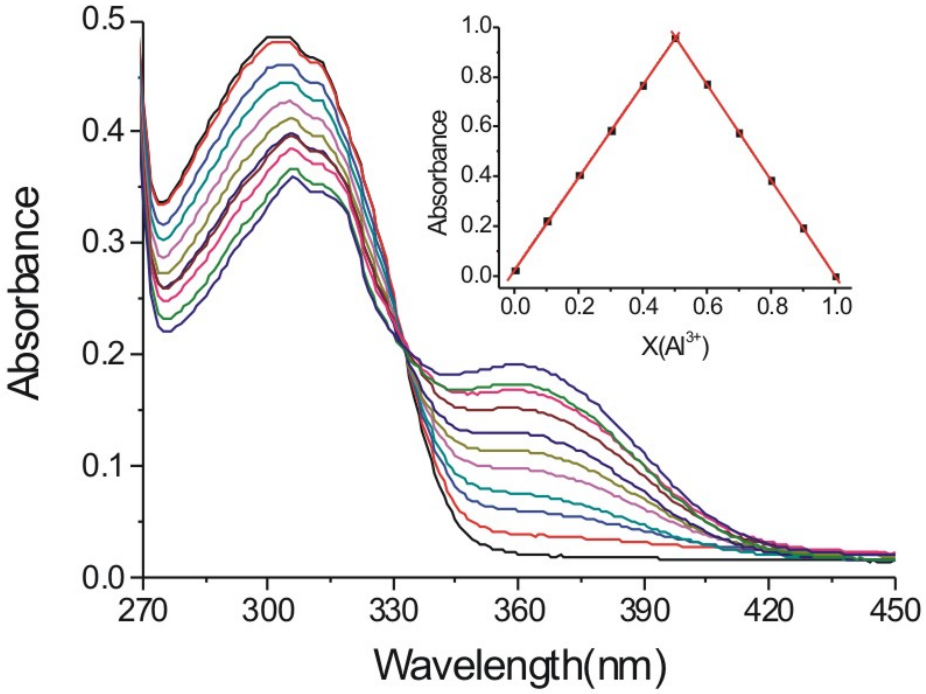


Fig. S7 Adsorption spectra of 1 (10^{-4} M) in acetonitrile when titrated with Al^{3+} (0, 2, 4, 6, 8, 10, 12,14,16,18, 20 μL). Inset: Job's plot of 1 and Al^{3+} in the same medium according to the absorbance at 365 nm.

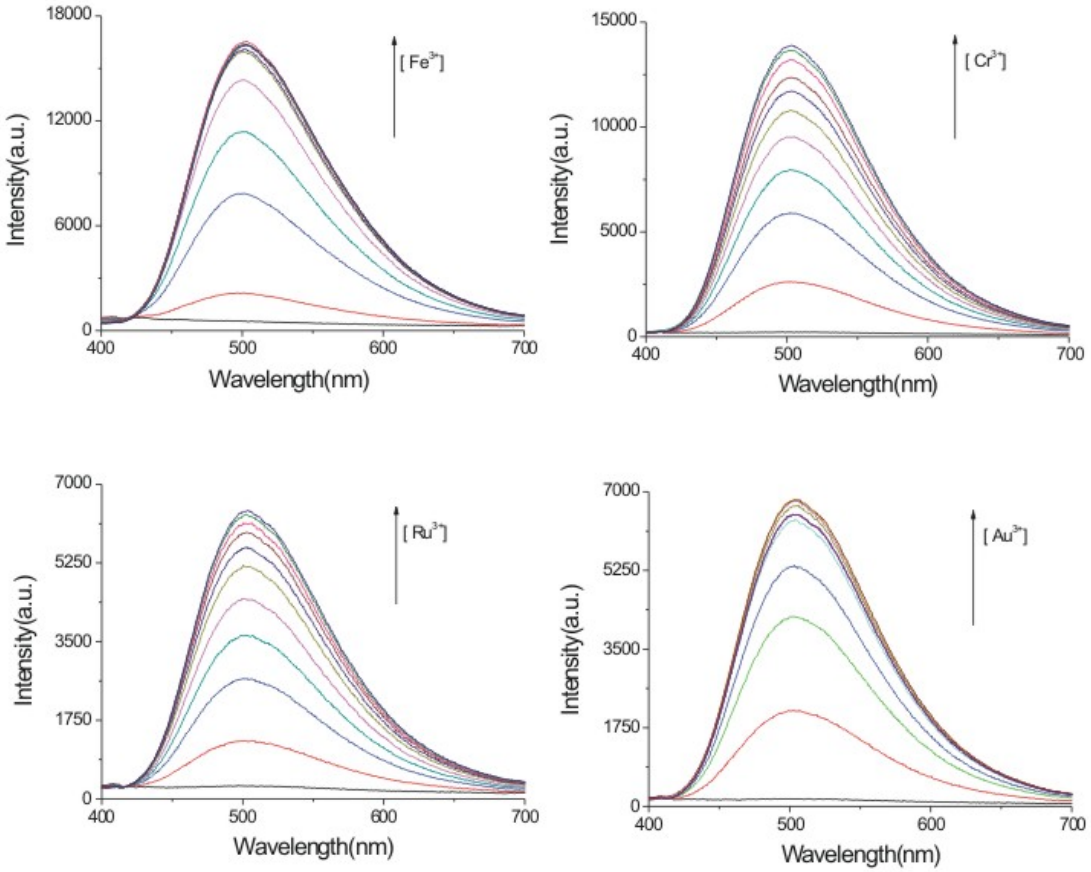


Fig. S8 Fluorescence titration spectra of 1 (10^{-4} M) upon titration with Fe^{3+}, Cr^{3+}, Ru^{3+} and Au^{3+} (0, 2, 4, 6, 8, 10,12,14,16,18, 20 μL) in ethanol absolute (excitation is at 365 nm, emission is monitored at 502 nm).

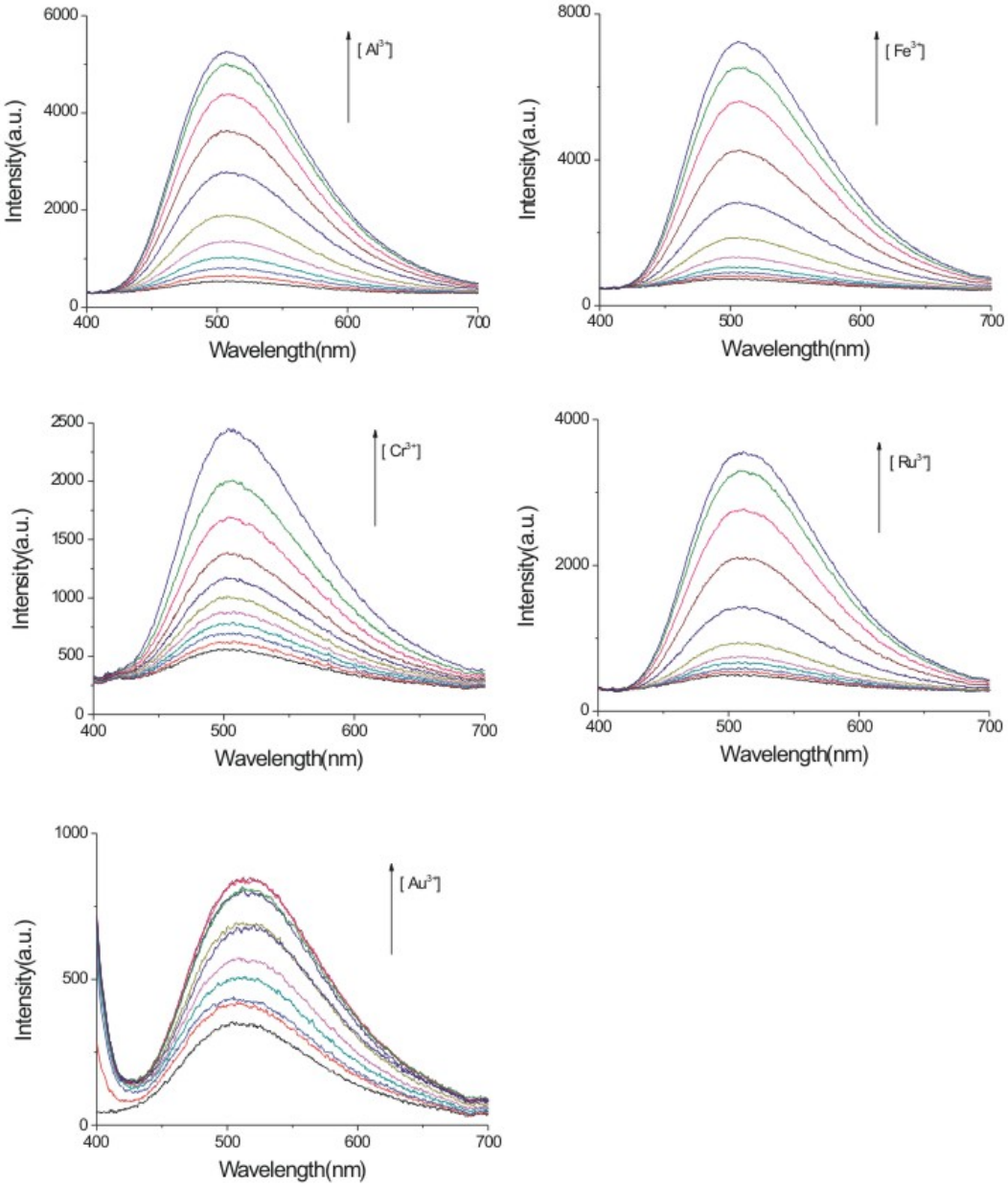


Fig. S9 Fluorescence titration spectra of 1(10^{-4} M) upon titration with Al^{3+}, Fe^{3+}, Cr^{3+}, Ru^{3+} and Au^{3+} (0, 2, 4, 6, 8,10,12,14,16,18, 20 μL) in water.

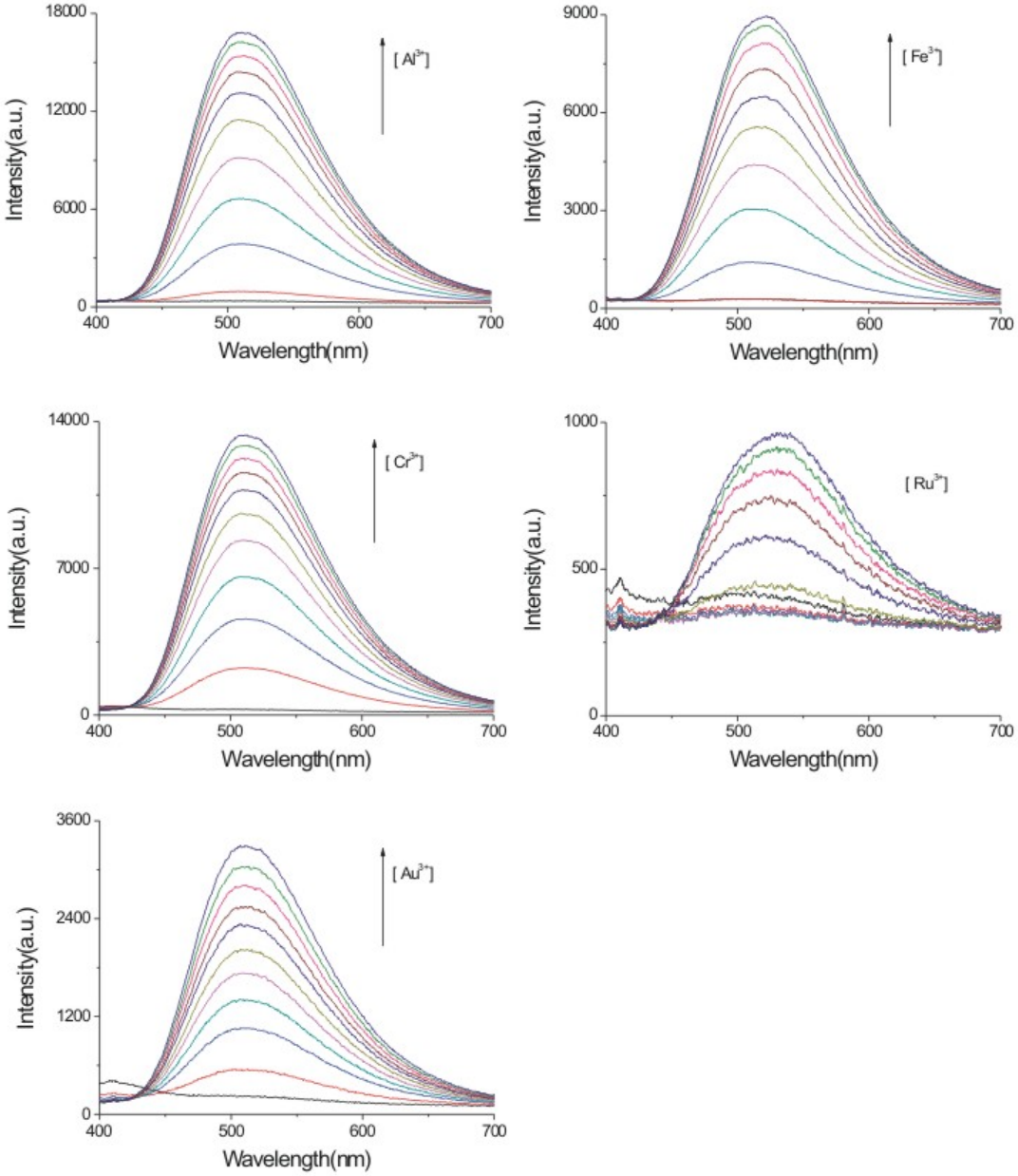
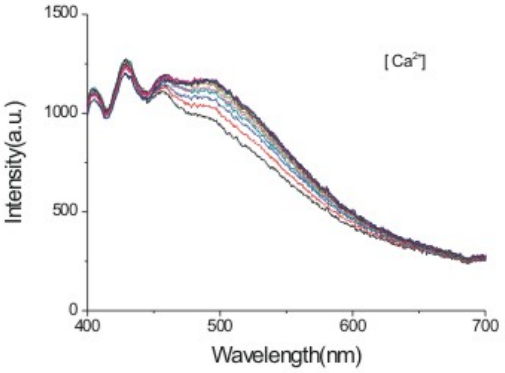
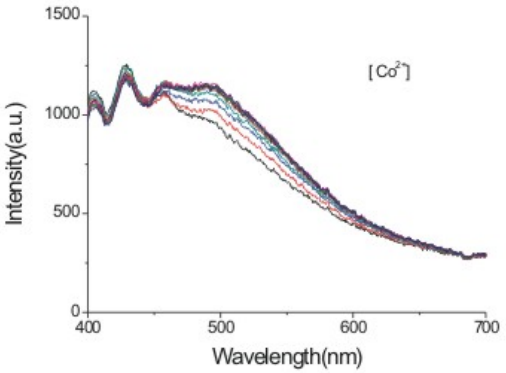
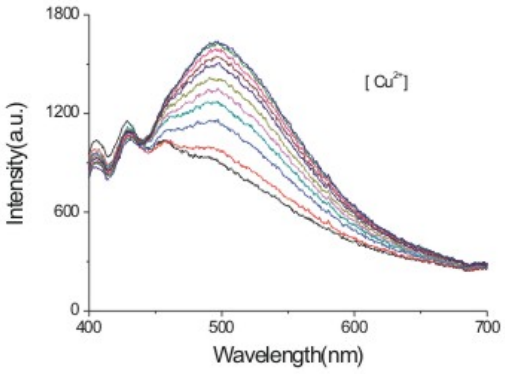
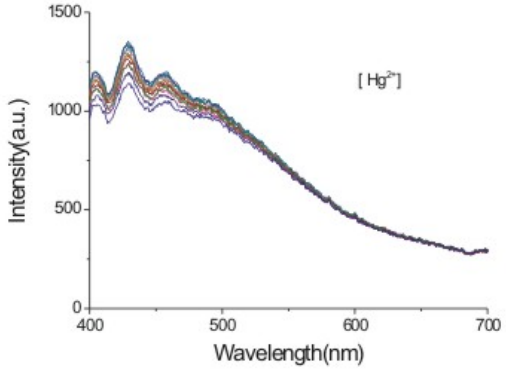


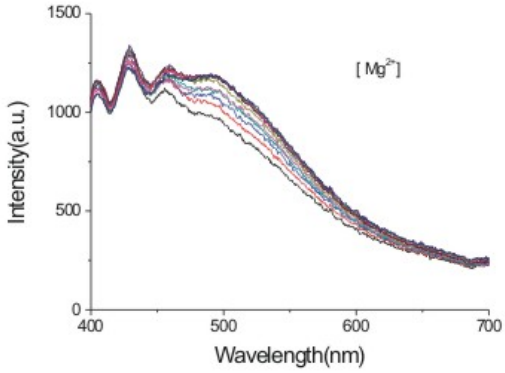
Fig. S10 Fluorescence titration spectra of 1(10^{-4} M) upon titration with Al^{3+}, Fe^{3+}, Cr^{3+}, Ru^{3+} and Au^{3+} (0, 2, 4, 6, 8,10,12,14,16,18, 20 μL) in acetonitrile.

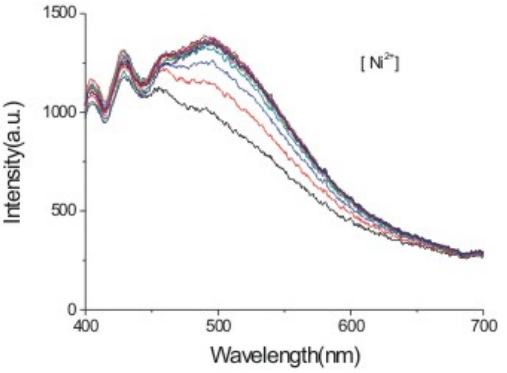

[Ca2+]
Intensity(a.u.)
Wavelength(nm)
0
500
1000
1500
400
500
600
700


[Co2+]
Intensity(a.u.)
Wavelength(nm)
0
500
1000
1500
400
500
600
700


[Cu2+]
Intensity(a.u.)
Wavelength(nm)
0
600
1200
1800
400
500
600
700


[Hg2+]
Intensity(a.u.)
Wavelength(nm)
0
500
1000
1500
400
500
600
700


[Mg2+]
Intensity(a.u.)
Wavelength(nm)
0
500
1000
1500
400
500
600
700


[Ni2+]
Intensity(a.u.)
Wavelength(nm)
0
500
1000
1500
400
500
600
700

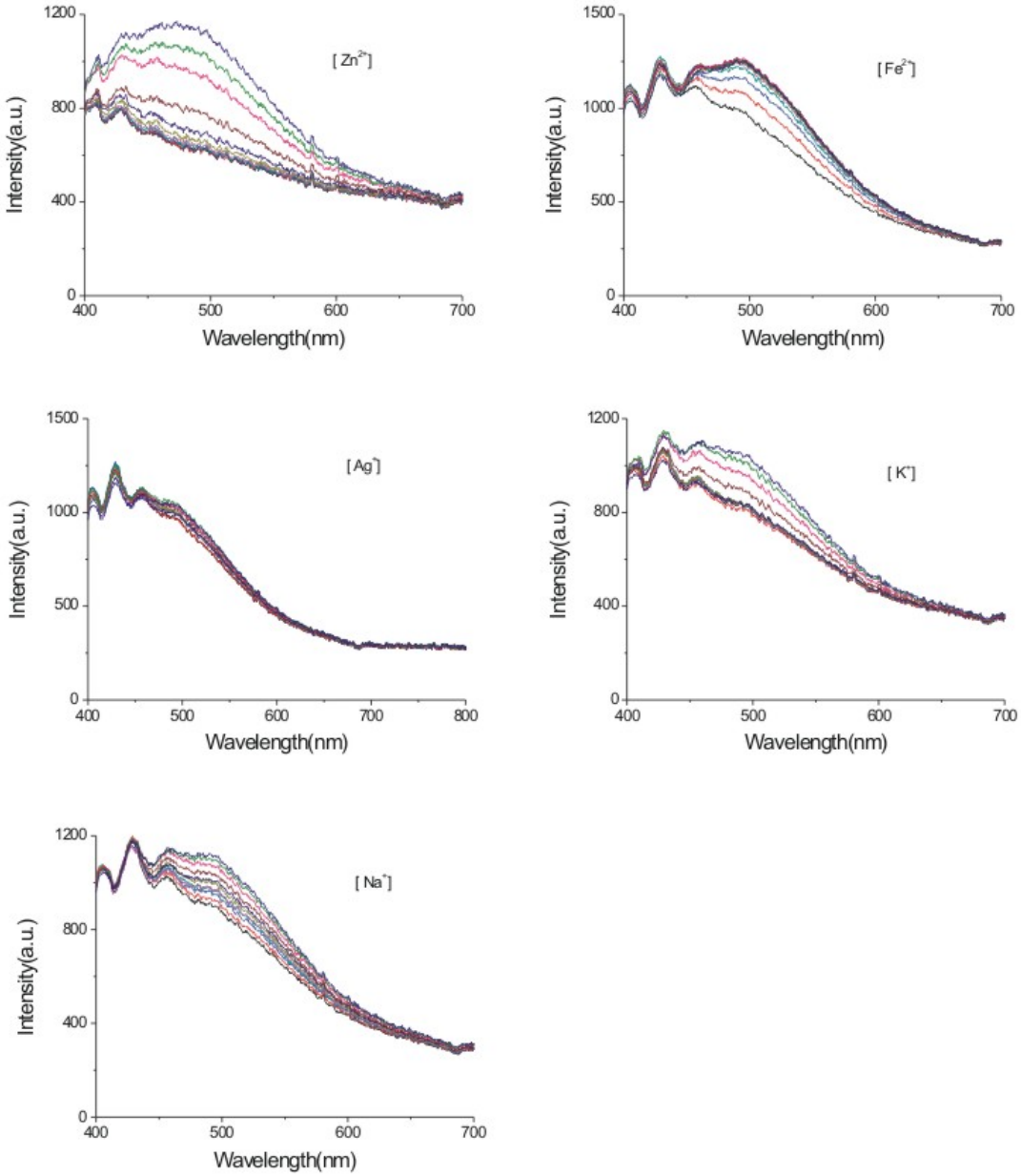


Fig. S11 Fluorescence titration spectra of receptor with different guest cations (0, 2, 4, 6, 8, 10, 12,14,16,18, 20 μL) in ethanol absolute

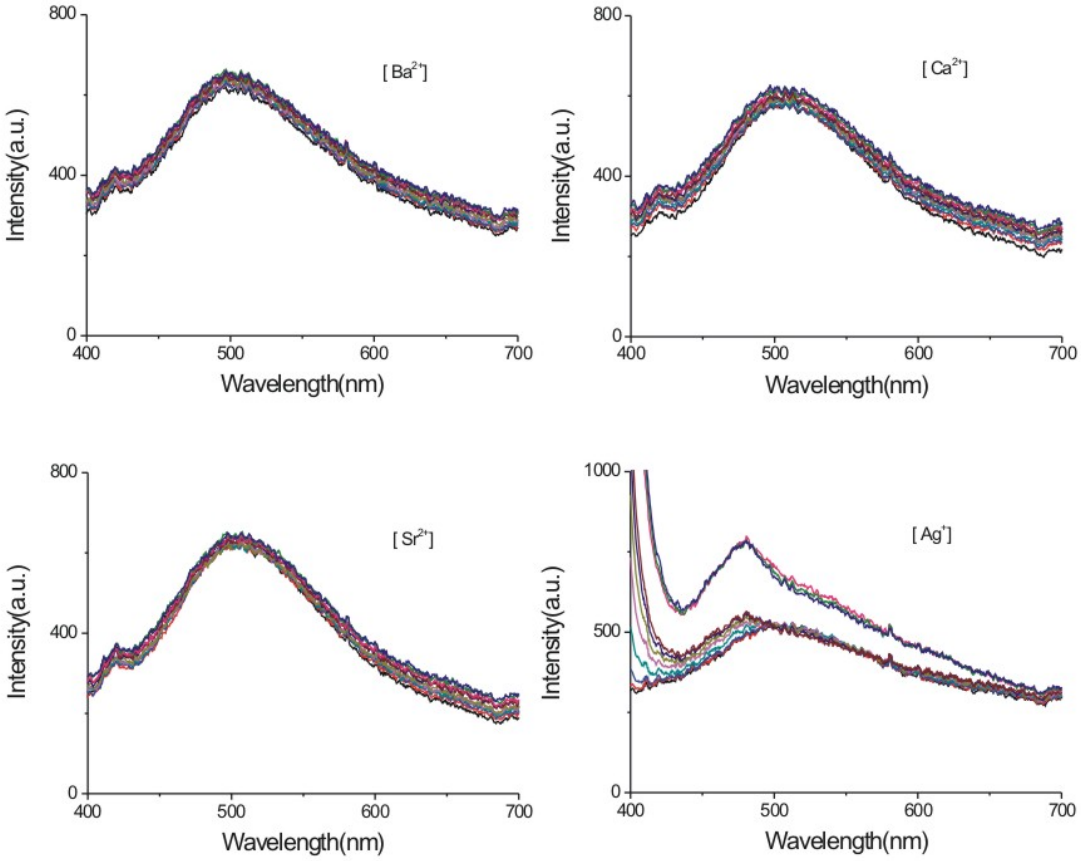


Fig. S12 Fluorescence titration spectra of receptor with different guest cations (0, 2, 4, 6, 8, 10, 12,14,16,18, 20 μL) in water