

## Benzofuran- $\beta$ -alaninamide based “turn-on” fluorescent chemosensor for selective recognition of $\text{Fe}^{3+}$ ions

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### Supplementary Information

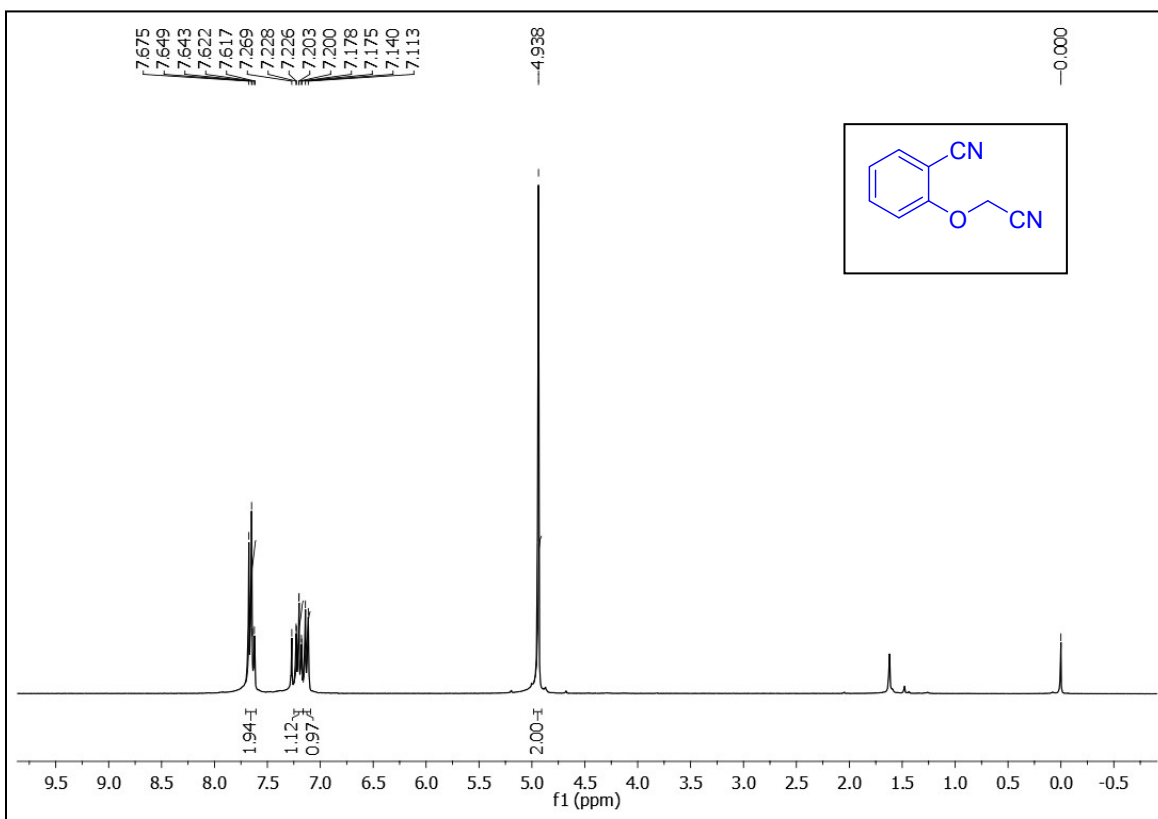
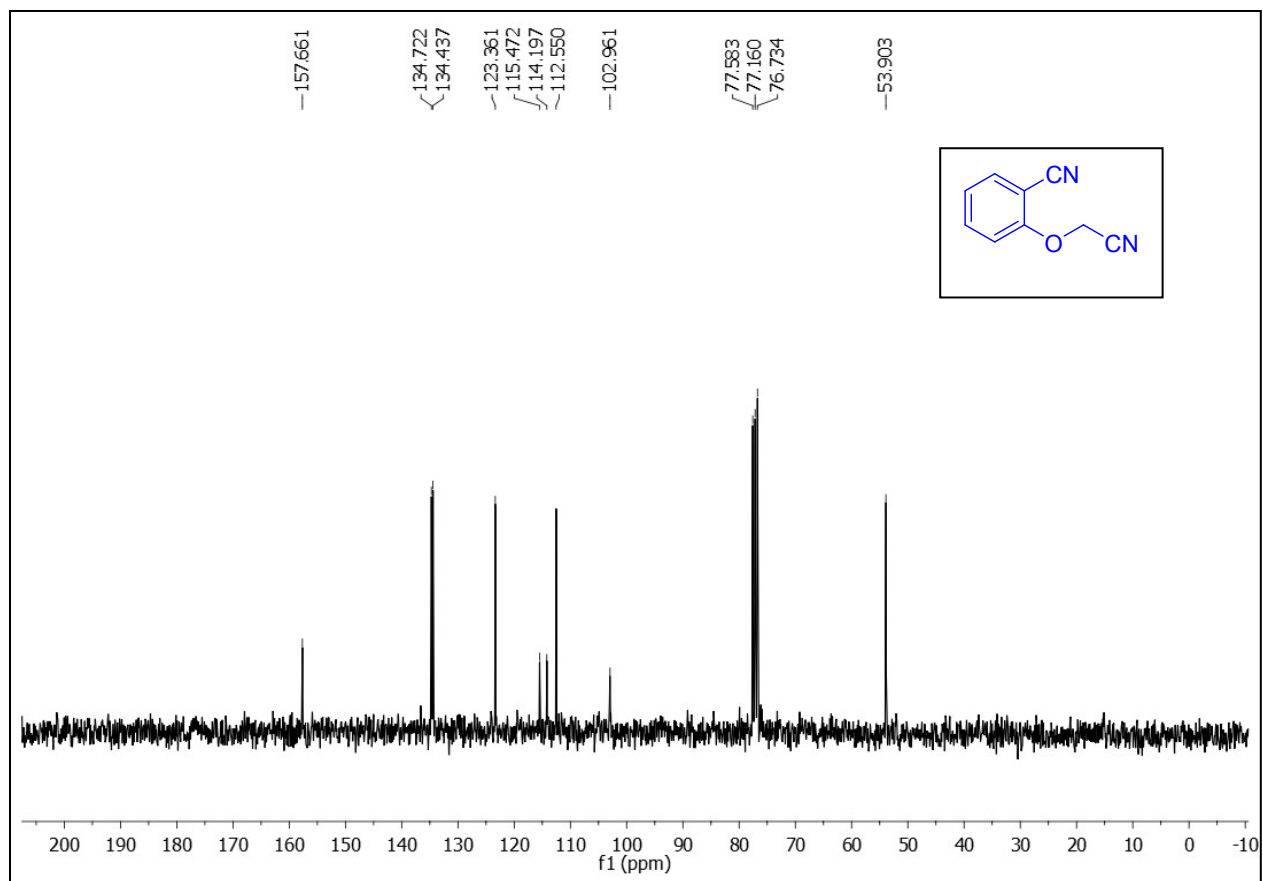
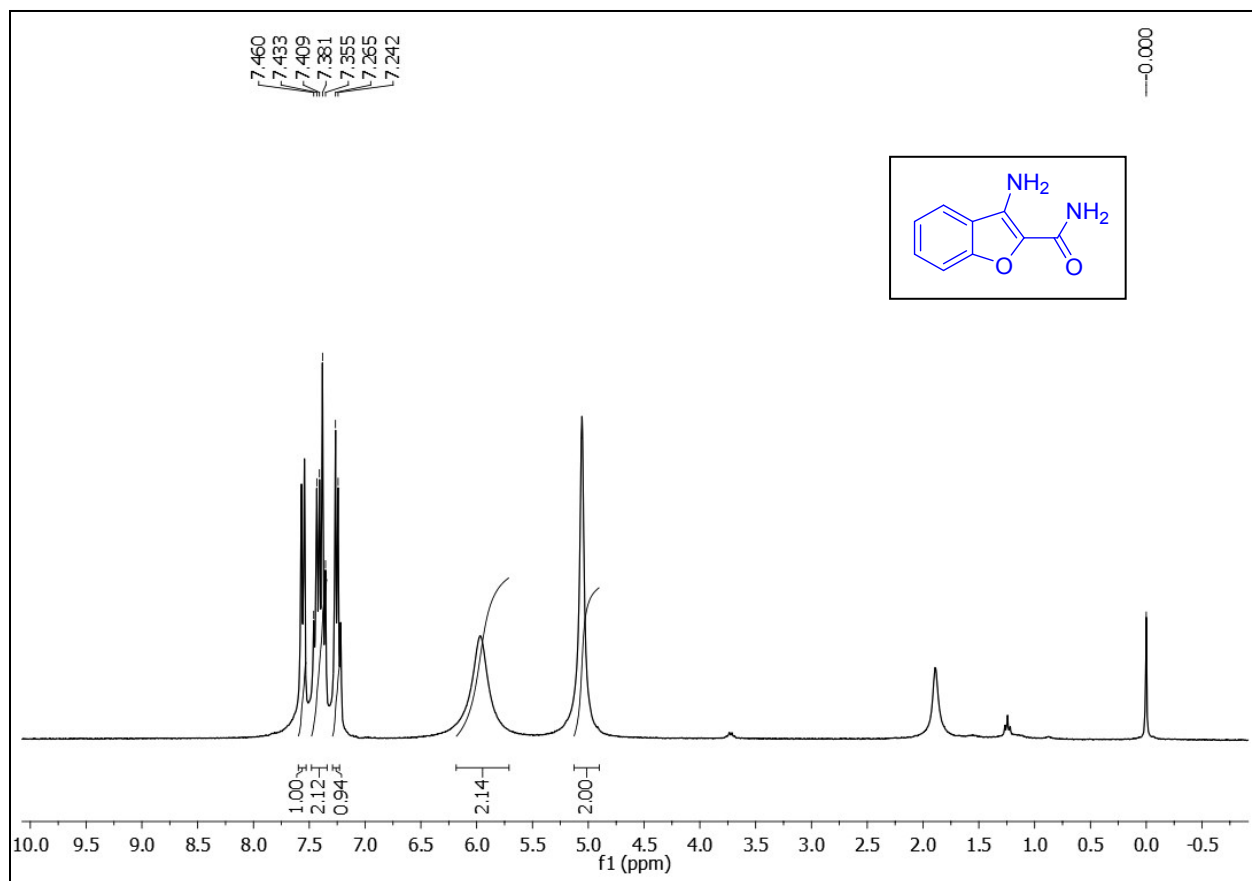


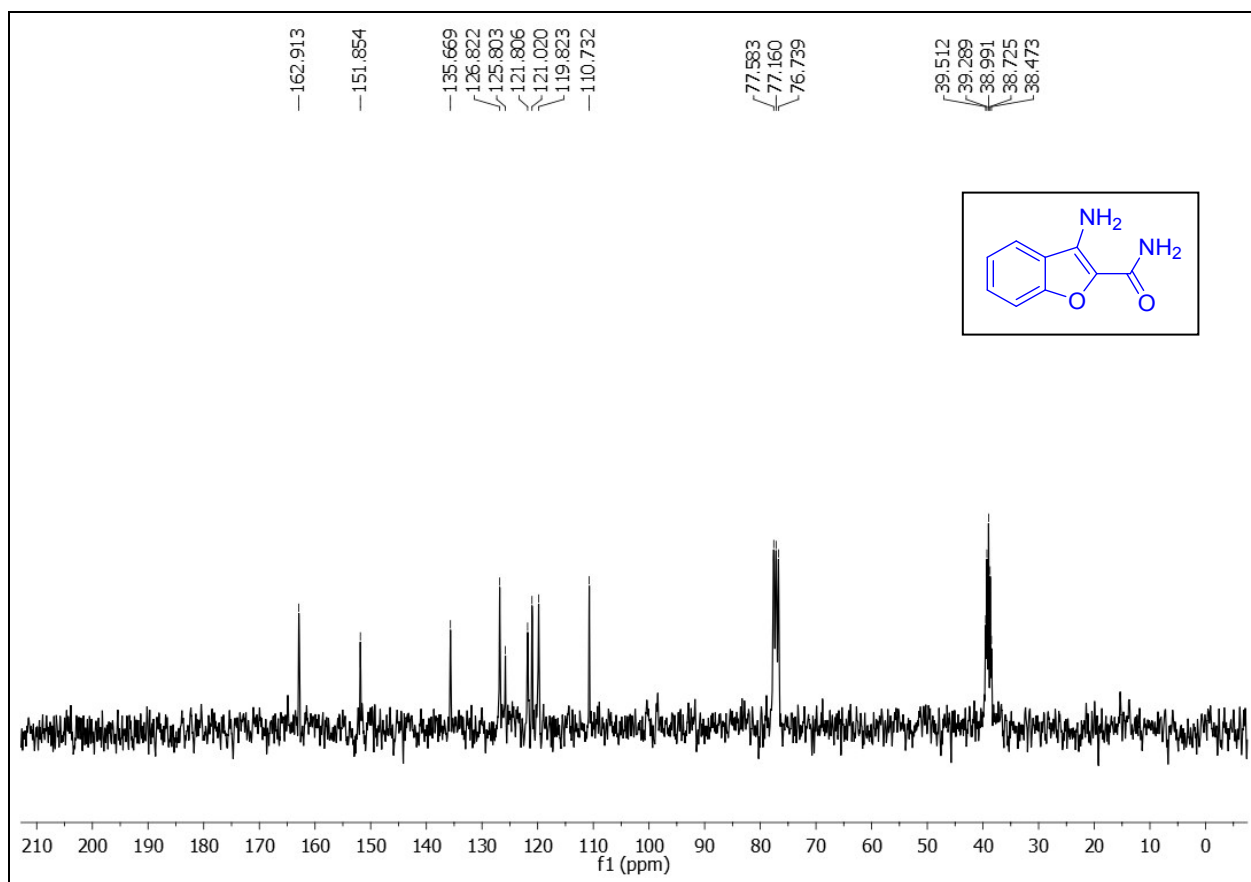
Fig. S1 <sup>1</sup>H NMR ( $\text{CDCl}_3$ , 300MHz) of compound 2



**Fig. S2**  $^{13}\text{C}$  NMR (CDCl<sub>3</sub>, 75MHz) spectrum of 2



**Fig. S3**  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300MHz) of compound 3



**Fig. S4**  $^{13}\text{C}$  NMR ( $\text{CDCl}_3+\text{DMSO-D}_6$ , 75MHz) spectrum of 3

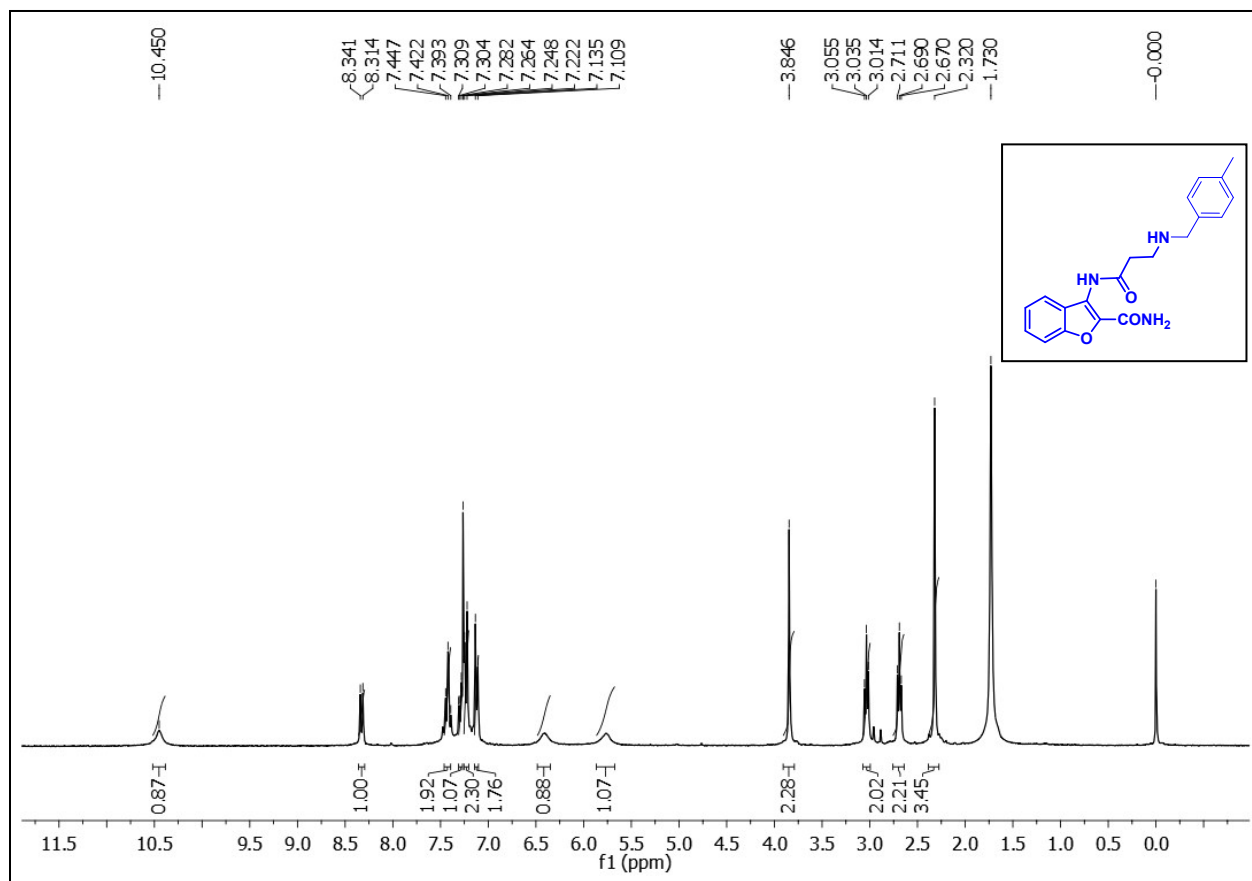


Fig. S5  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300MHz) of BAA

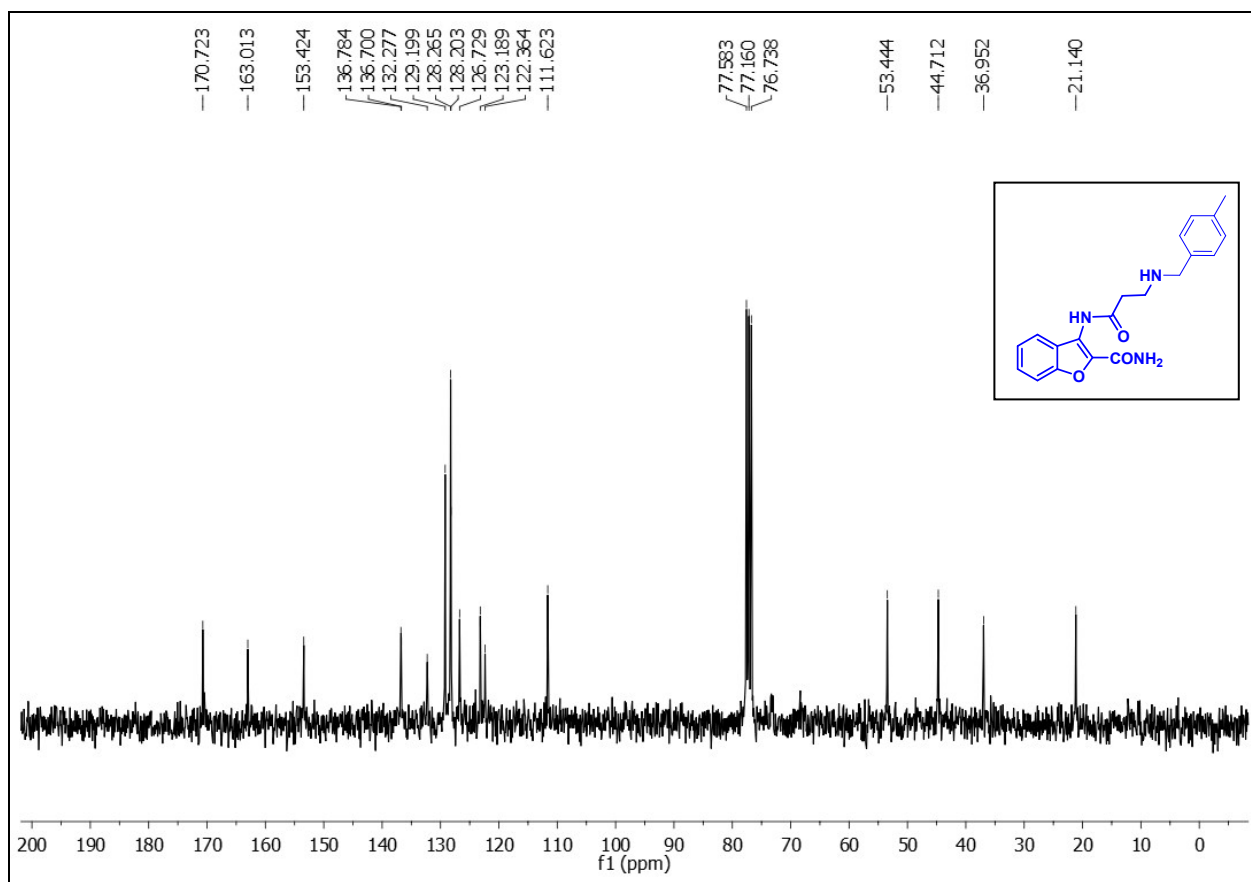
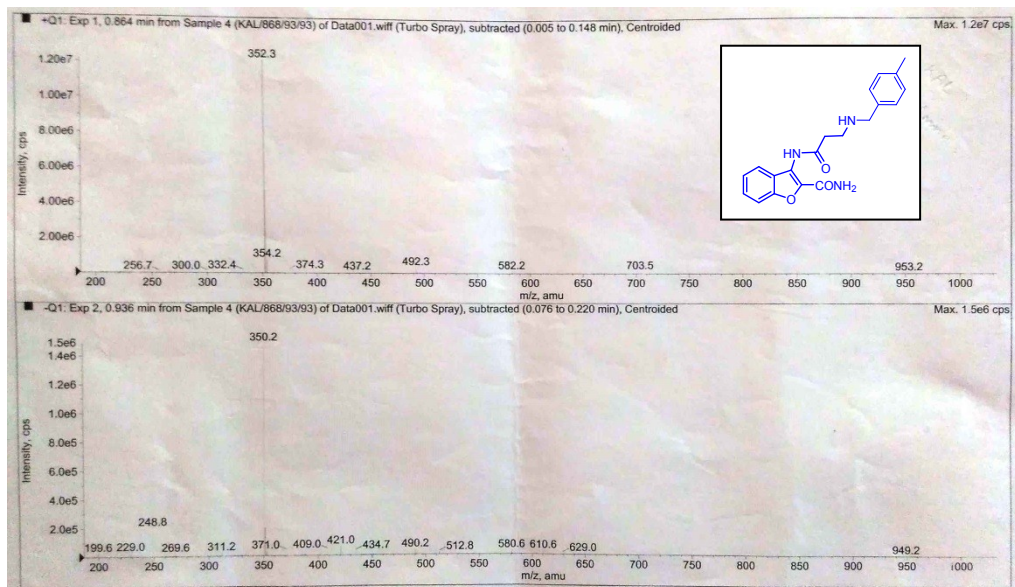
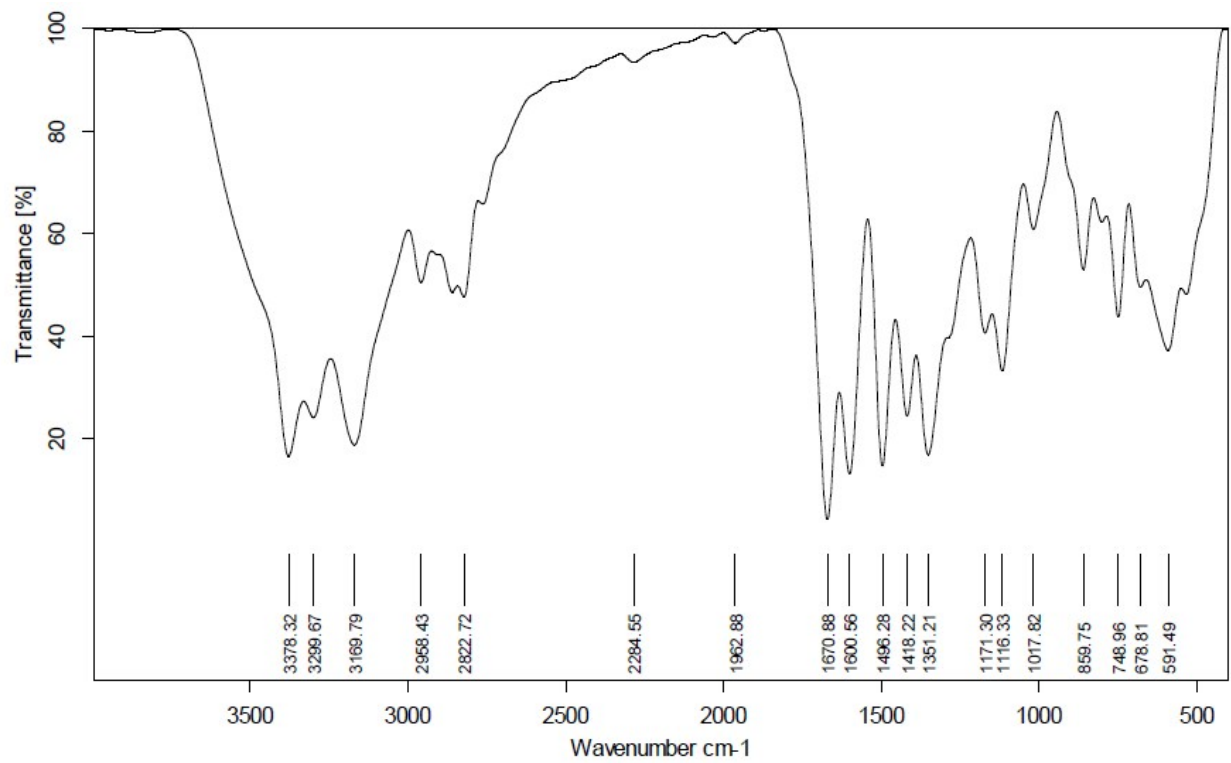


Fig. S6  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75MHz) spectrum of **BAA**

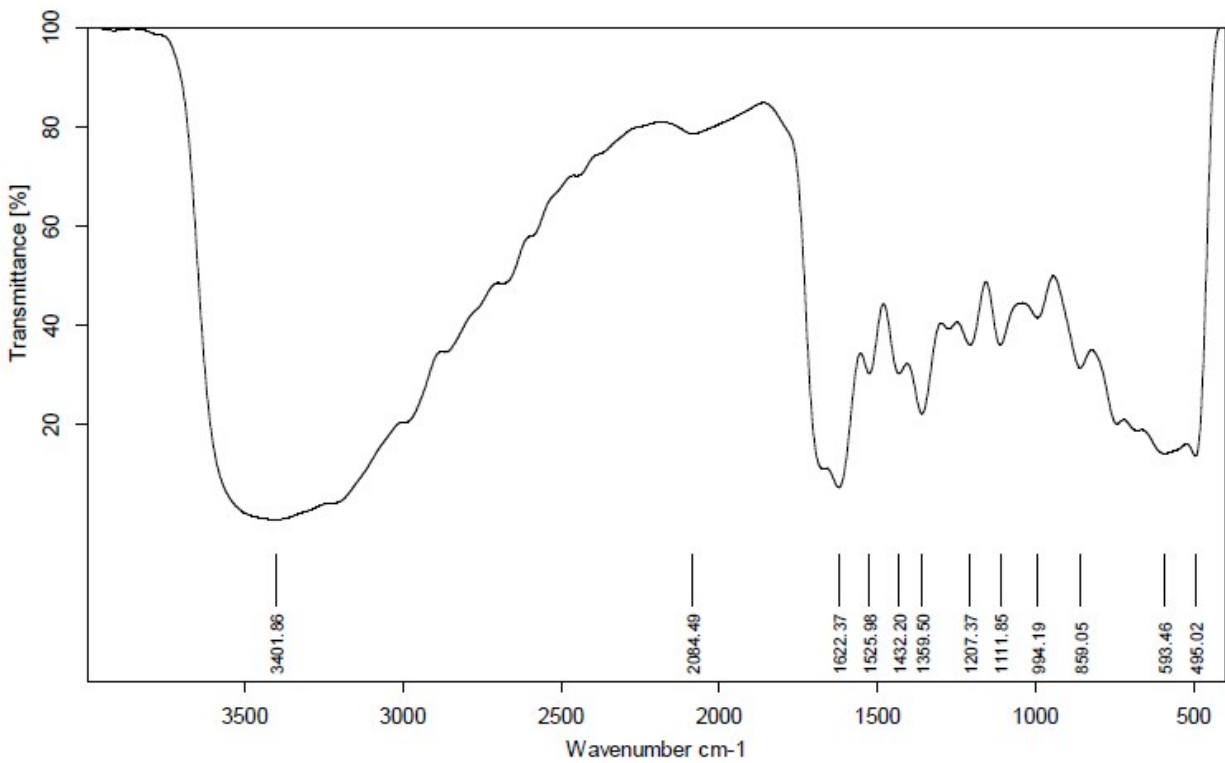


**Fig. S7** ESI-Mass spectrum of BAA

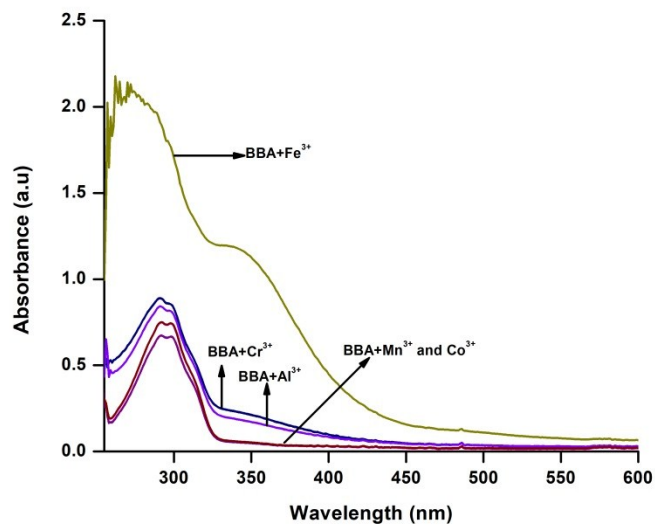


**Fig. S8** IR spectrum of BAA

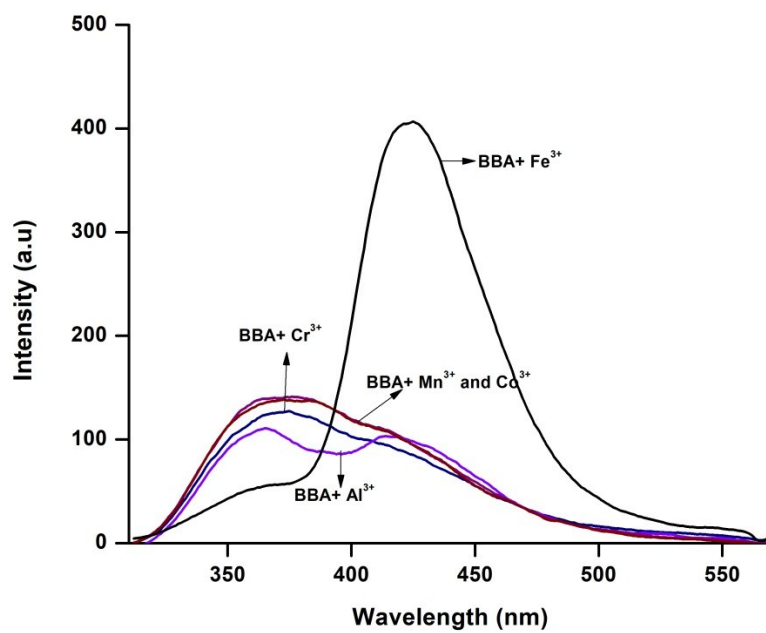




**Fig. S9** IR spectrum of **BAA-Fe<sup>3+</sup>** complex



**Fig. S10** UV-vis spectra of **BAA** (25 μM) with 10 equiv. of various trivalent metal ions in DMSO/H<sub>2</sub>O solution (9:1, v/v).



**Fig. S11** Fluorescence spectra of **BAA** (25 μM) with 10 equiv. of various trivalent metal ions in DMSO/H<sub>2</sub>O solution (9:1, v/v).

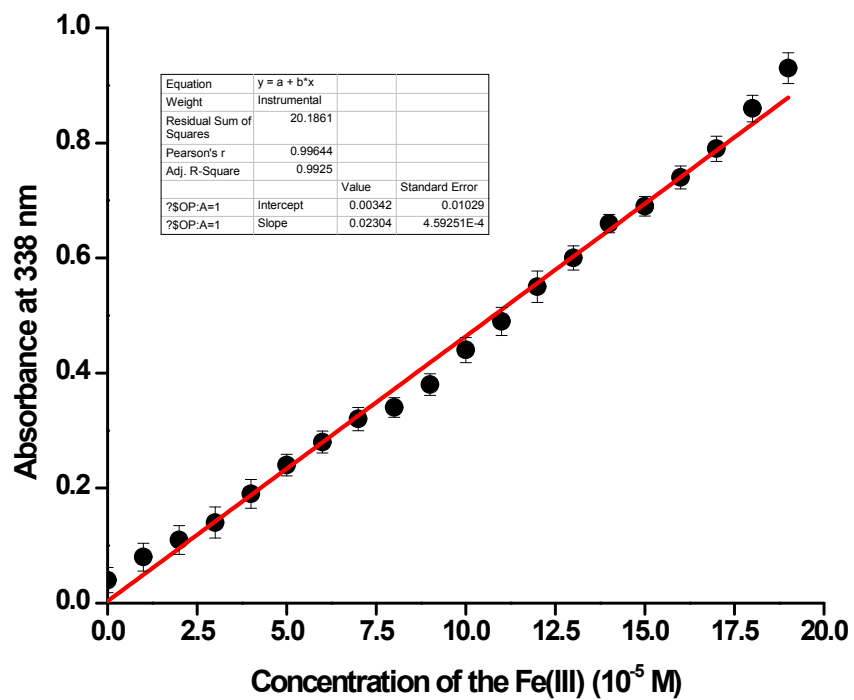


Fig. S12 Linearity plot derived from sensitivity experiment in UV-vis spectroscopy.

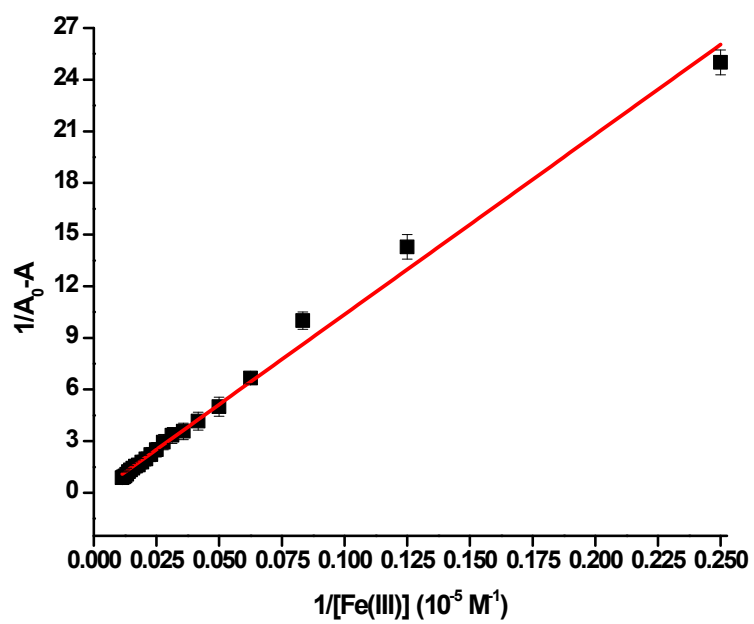
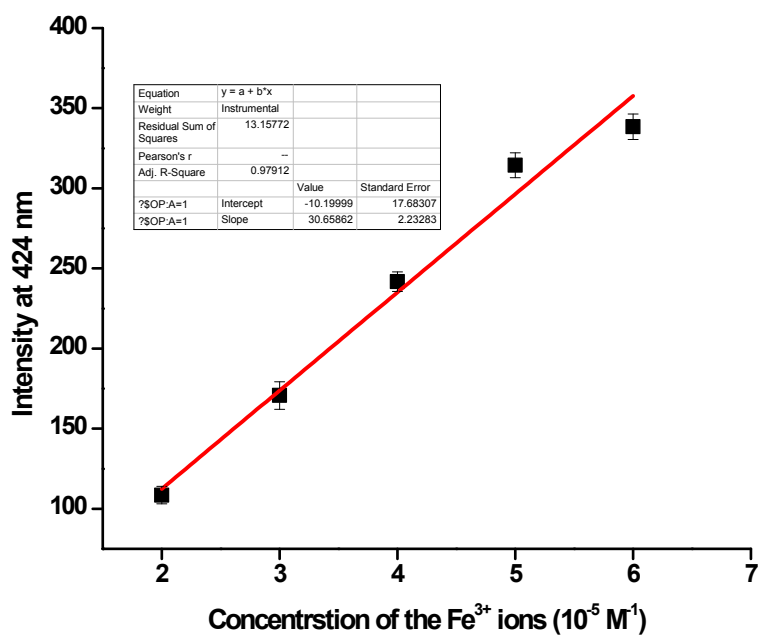


Fig. S13 B-H plot analysis of  $Fe^{3+}$  with BAA from UV-vis Spectroscopy.



**Fig. S14** Linearity plot derived from sensitivity experiment in Fluorescence spectroscopy.

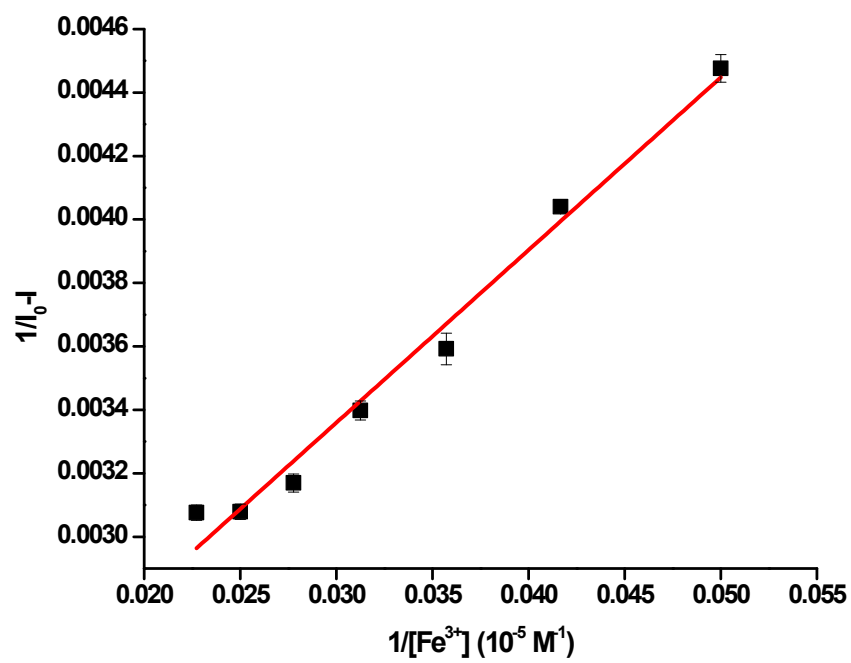
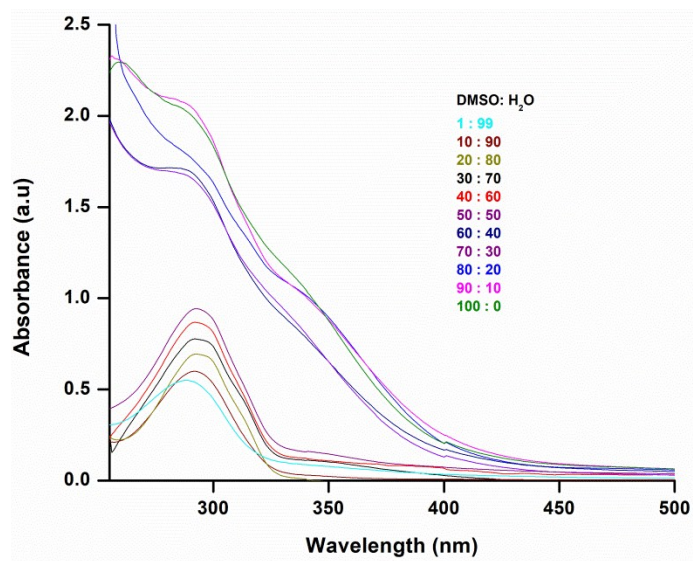
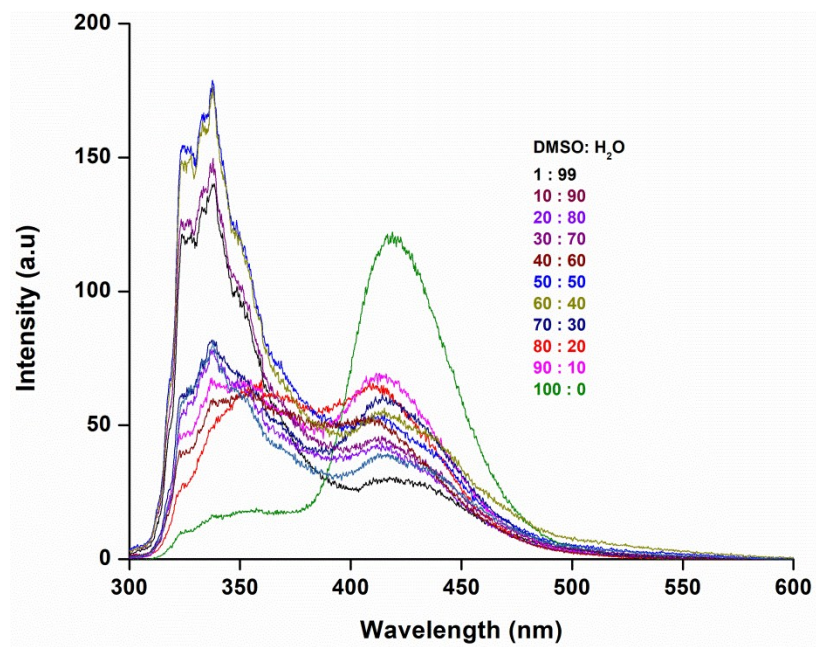


Fig. S15 B-H plot analysis of  $Fe^{3+}$  with **BAA** from Fluorescence Spectroscopy.



**Fig. S16** Absorbance spectroscopy of Chemosensor with Fe<sup>3+</sup> ions in various solvent fractions.





**Fig. S17** Fluorescence spectroscopy of chemosensor with Fe<sup>3+</sup> ions in various solvent fractions.