## **Supporting Information**

## A highly selective fluorescent 'turn-on' chemosensor for Zn<sup>2+</sup> based on a benzothiozole conjugate, their applicable in live cell imaging and resultant complex as secondary sensor of CN<sup>-</sup>

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**Figure S1.** Bar diagram showing effect of 5 equivalents of different metal ions on the fluorescent intensity of **3** (10  $\mu$ M) in DMSO/H<sub>2</sub>O (9:1, *v/v*) solution.



**Figure S2.** Benesi-Hildebrand plot for receptor **3**,  $1/\Delta F$  vs  $1/[Zn^{2+}]$ .



**Figure S3.** The Job's plot of mole fraction of  $Zn^{2+}$  vs. fluorescence intensity.



Figure S4. Linear fitting of normalised plot from fluorescence spectroscopy.



Figure S5. IR Spectra of receptor 3.



Figure S6. <sup>1</sup>H-NMR Spectra of receptor 3.







Figure S8. LC-MS Spectra of receptor 3.



Figure S9. LC-MS Spectra of Complex  $3.Zn^{2+}$ .



Figure S10. IR Spectra of Complex 3.Zn<sup>2+</sup>.



Figure S11. Fluorescence emission spectra of  $3.Zn^{2+}$  (10  $\mu$ M) upon addition of CN<sup>-</sup> (0-400 $\mu$ l) in DMSO/H<sub>2</sub>O (9:1, v/v).



Figure S12. Calibration curve for calculation of detection limit (For CN<sup>-</sup>).



Figure S13. Benesi-Hildebrand plot for receptor 3. $Zn^{2+}$ ,  $1/\Delta F$  vs  $1/[CN^{-}]$ .



Figure S14. HR-MS Spectra of Complex 3.Zn<sup>2+</sup>.