Supporting Information for

A turn-on, near-infrared fluorescent probe with rapid response, large stokes shift for selective and sensitive detection of zinc (II) and its application in living cells

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1. $^1$H NMR spectrum, $^{13}$C NMR spectrum and MS spectrum

$^1$H NMR spectrum (Fig. S1) of compound 1

$^{13}$C NMR spectrum (Fig. S2) of compound 1
Mass (ES-API) spectrum (Fig. S3) of compound 1:

\[ \text{1H NMR spectrum (Fig. S4) of compound 2} \]
$^{13}$C NMR spectrum (Fig. S5) of compound 2

$^1$H NMR spectrum (Fig. S6) of compound 3
Mass (ES-API) spectrum (Fig. S7) of compound 3

$^1$H NMR spectrum (Fig. S8) of compound 4
$^{13}$C NMR spectrum (Fig. S9) of compound 4

Mass (ES-API) spectrum (Fig. S10) of compound 4
$^1$H NMR spectrum (Fig. S11) of compound 5

$^{13}$C NMR spectrum (Fig. S12) of Compound 5
Mass (ES-API) spectrum (Fig. S13) of compound 5

$^1$H NMR spectrum (Fig. S14) of compound YPT
\[ ^{13}\text{C} \text{NMR spectrum (Fig. S15) of compound YPT} \]
Mass (ES-API) spectrum (Fig. S16) of compound YPT

**Fig. S17** Determination of the detection limit of YPT (10 μM) for Zn$^{2+}$ based on change of fluorescent intensity at 670 nm.

2. Determination of the detection limit of YPT
3. Benesi-Hildebrand plot of YPT

Fig. S18 Benesi-Hildebrand plot of YPT (10 μM) at 670nm, assuming 1:1 stoichiometry for association between YPT and Zn$^{2+}$.

4. Effect of pH on sensing Zn$^{2+}$

Fig. S19 Fluorescence intensity of YPT (10 μM) in the absence and presence with 5.0 equiv. of Zn$^{2+}$ at 670 nm in DMSO-H$_2$O (3:2 v/v, pH 7.4 HEPES buffer, 0.5 nm).
5. HR-MS spectrum of compound YPT and YPT-Zn$^{2+}$

HR-MS spectrum (Fig. S20) of compound YPT

HR-MS spectrum (Fig. S21) of compound YPT-Zn$^{2+}$
6. $^1$H NMR titrations

Fig. S22 $^1$H NMR titrations of TPT with ZnCl$_2$ in DMSO: (A) only YPT (B) YPT with 0.5 equiv. of Zn$^{2+}$ (C) YPT with 2 equiv. of Zn$^{2+}$ (D) YPT with 5 equiv. of Zn$^{2+}$
7. Cytotoxicity test

![Fig. S23 Cytotoxicity of YPT in Hela Cells](image-url)