Supplementary Information

A highly selective colorimetric fluorescence probe for Cu^{2+} in aqueous media: the synthesis, DFT investigation and its application in living cells

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Supplementary captions

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Fig. S9. FESEM and HRTEM images of probe **POPH** and Cu^{2+} complex.

Fig. S10. Cytotoxicity assay of **POPH**.

Table S1. Comparation of LOD in this work with other works previously

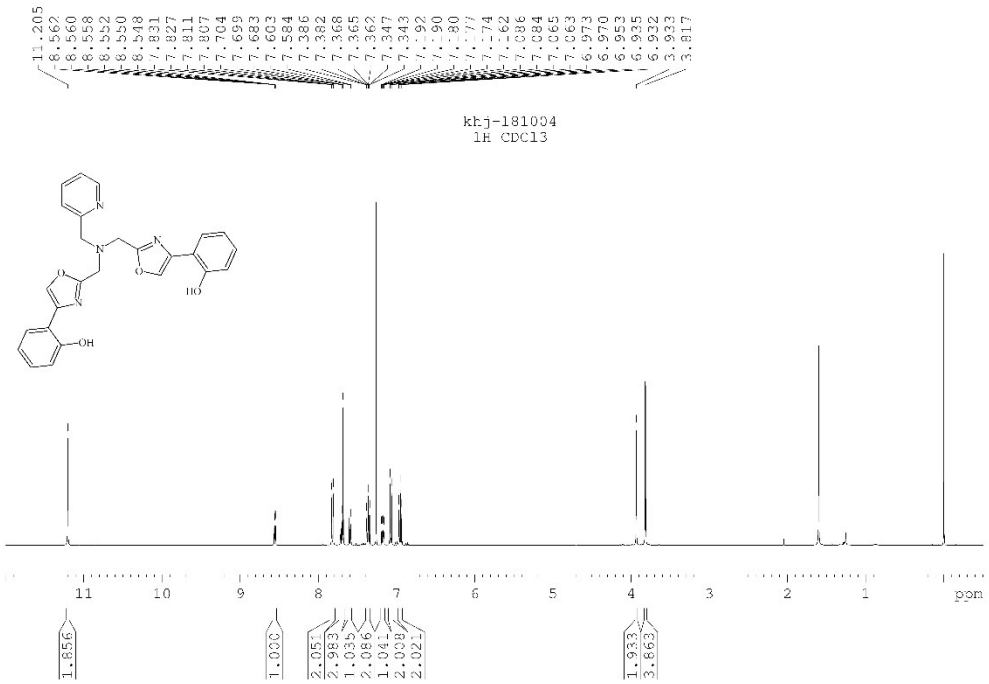
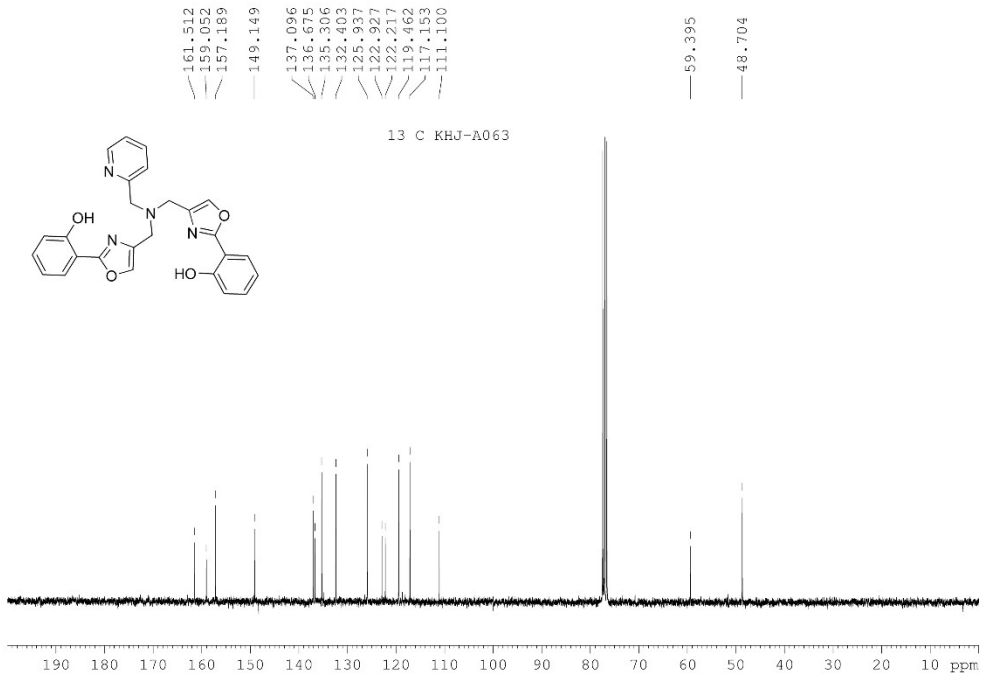


Fig. S1 ^{1}H NMR spectrum of probe **POPH** in $CDCl_3$



1

2 Fig. S2 ^{13}C NMR spectrum of probe **POPH** in $CDCl_3$

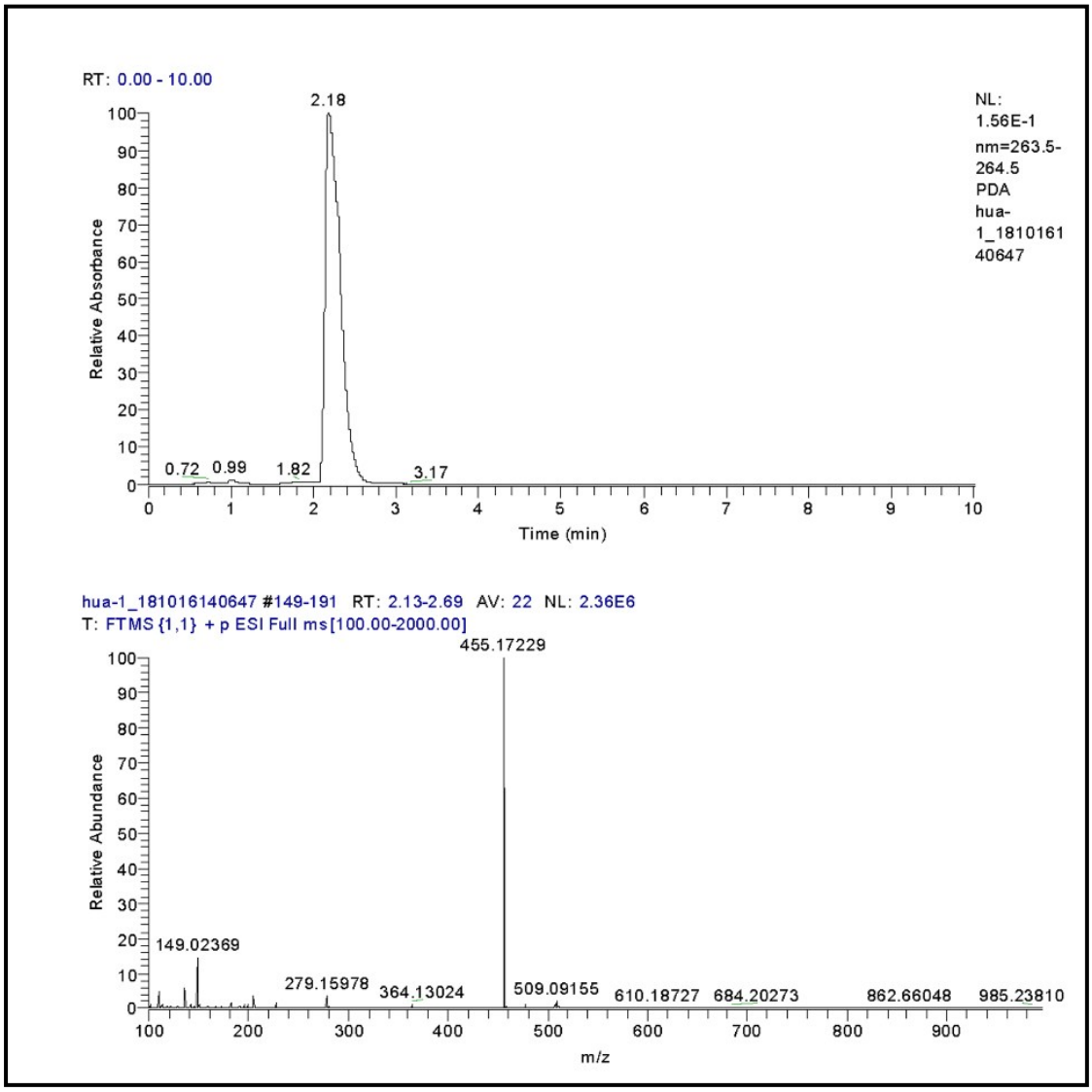


Fig. S3 LC-MS spectrum of probe **POPH**

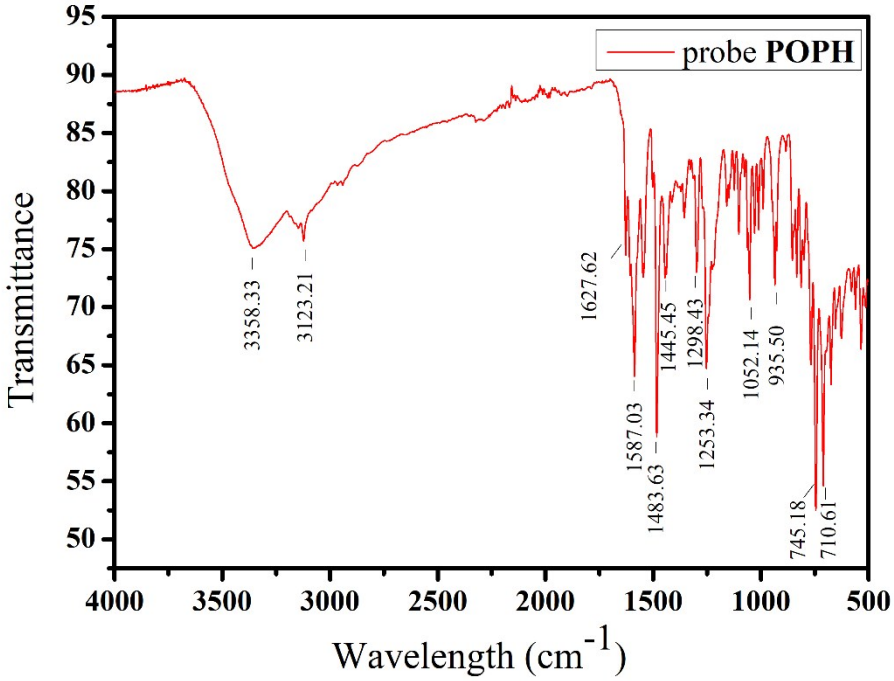


Fig. S4 IR spectrum of probe **POPH** in KBr disk

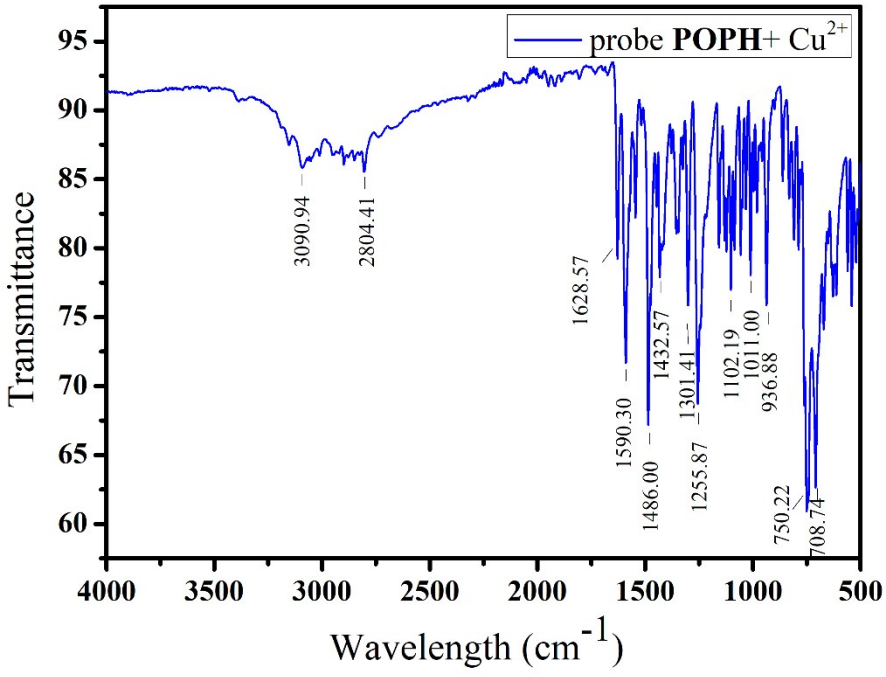


Fig. S5 IR spectrum of probe **POPH** and Cu^{2+} complex in KBr disk

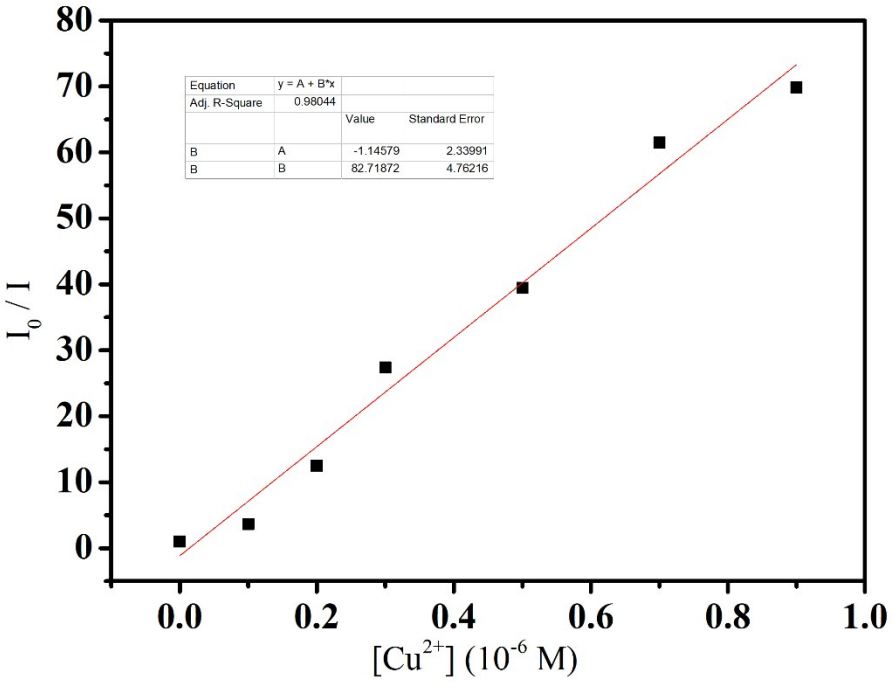


Fig. S6 Fluorescence changes of POPH at 468 nm as a function of aqueous Cu^{2+} ion concentration. Sd = 1.062×10^{-6} (from experimental data), and K = 82.72. Using the formula, we got LOD = 3.8×10^{-8} M.

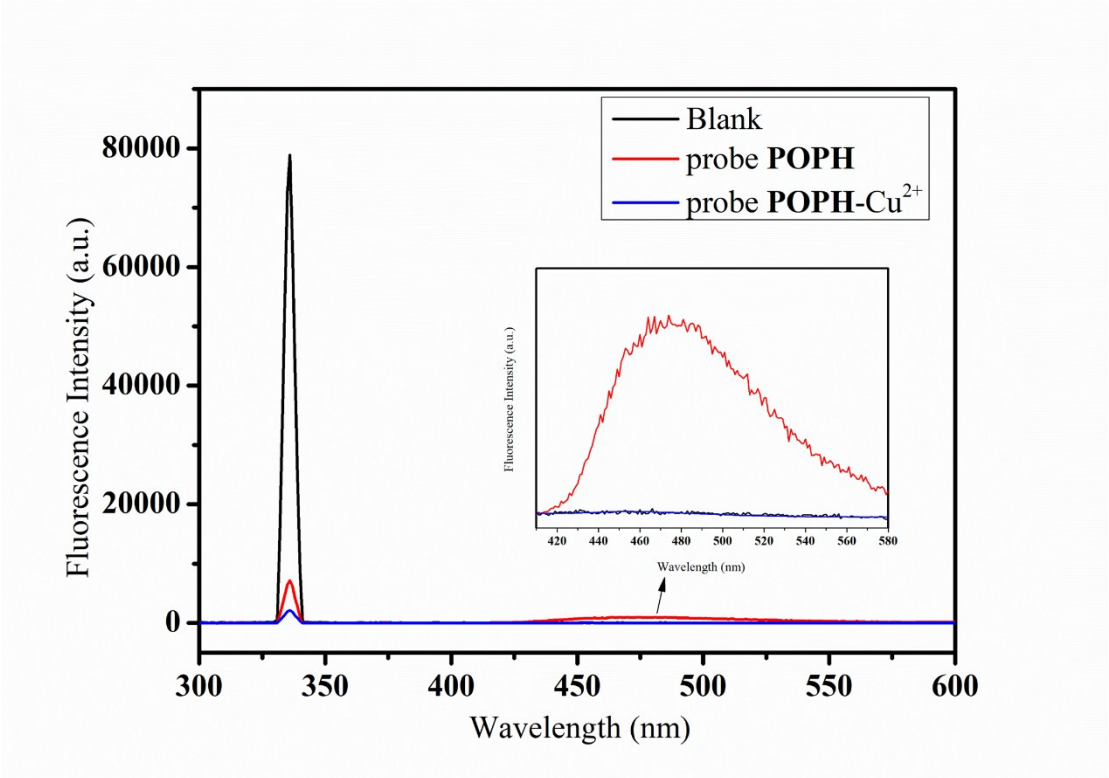


Fig. S7 Fluorescent quantum yield of probe **POPH** and probe **POPH-Cu^{2+}** under 336 nm excitation

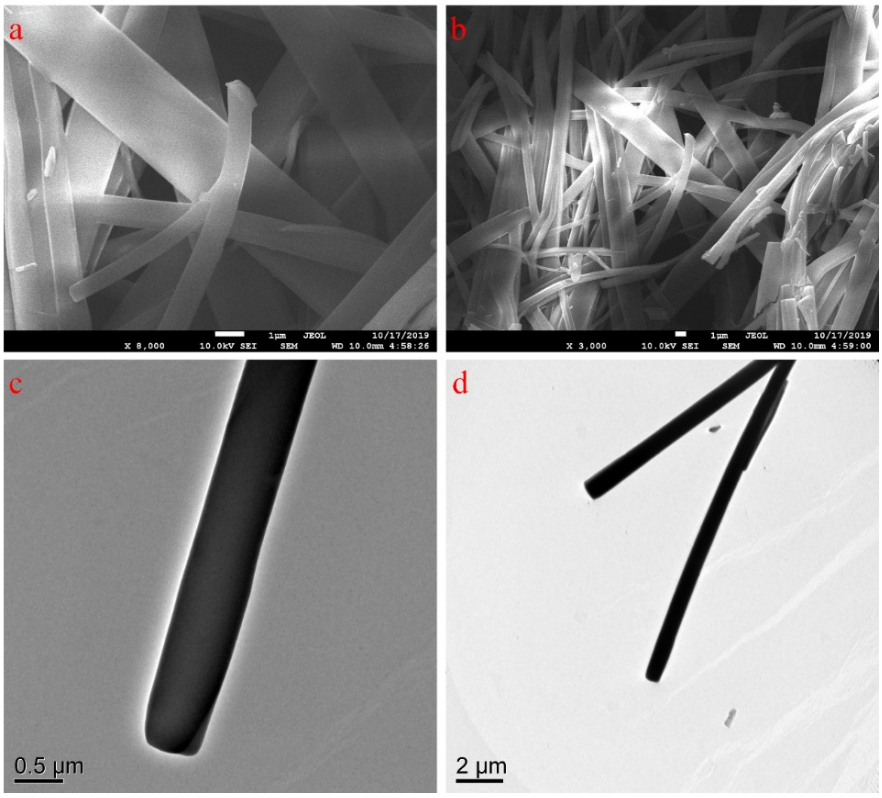


Fig. S8 FESEM and HRTEM images of probe **POPH**

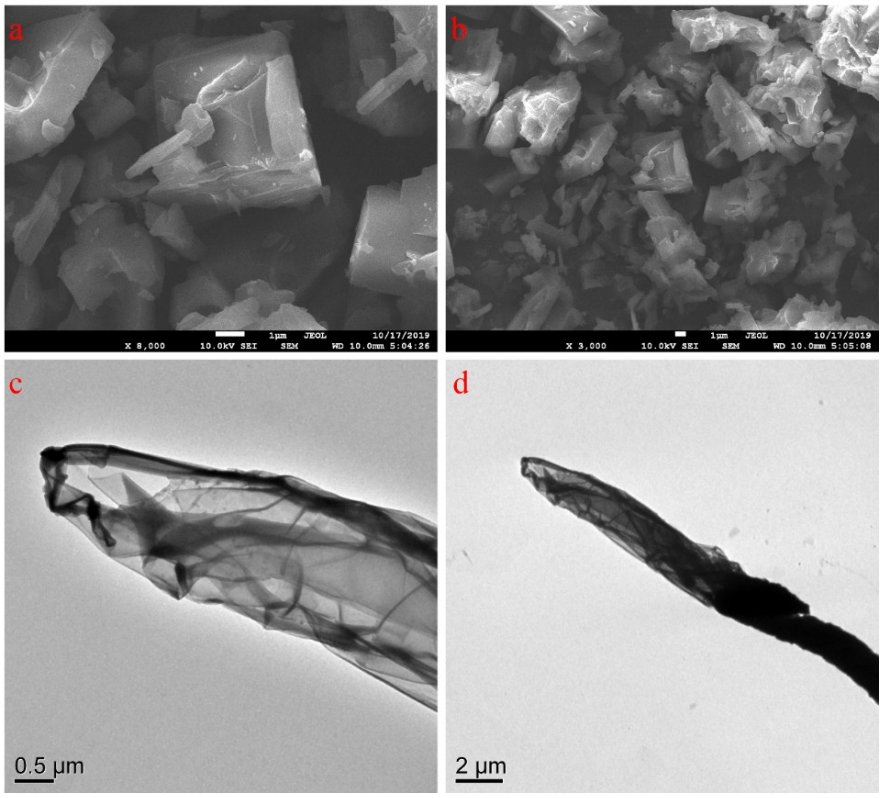


Fig. S9 FESEM and HRTEM images of probe **POPH** and Cu^{2+} complex

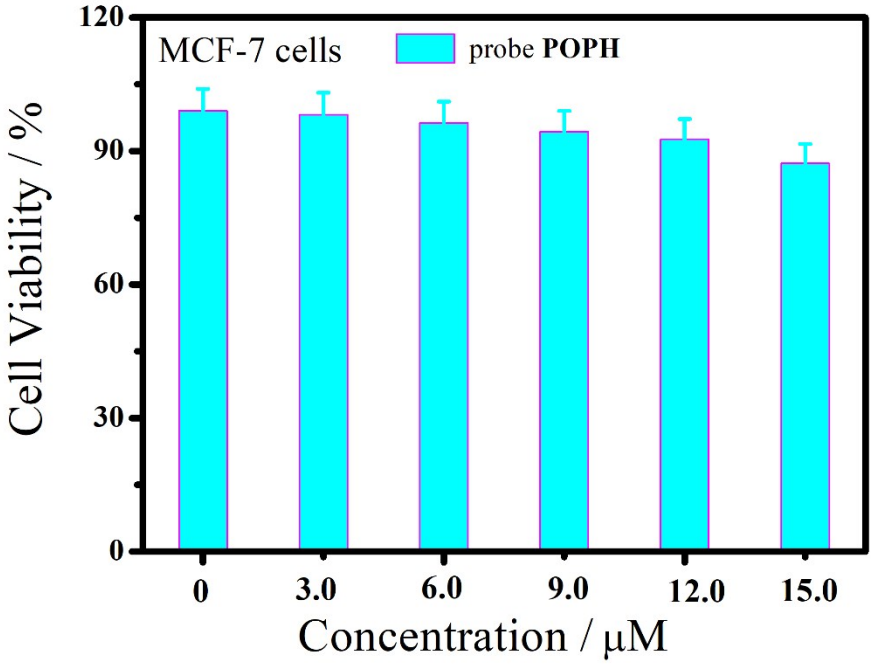


Fig. S10 Cytotoxicity assay of POPH after 4 h incubation

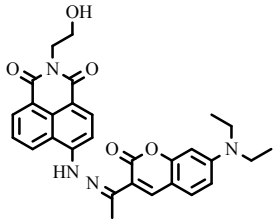
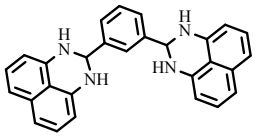
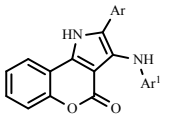
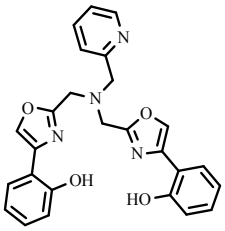
Compound	Sensing method	LOD (M)	Ref.
	Turn - off	3.9×10^{-8}	1
	Turn - off	6.19×10^{-8}	2
	Turn - off	1.13×10^{-8}	3
	Turn - off	3.8×10^{-8}	This work

Table S1 Comparation of LOD in this work with other works previously

Reference

1 C. R. Li, Z. Y. Yang and S. L. Li, *J. Lumin.*, 2018, **198**, 327-336.

2 R. Debashis, C. Arijit and G. Rina, *RSC Adv.*, 2017, **7**, 40563-40570.

3 S. Mukherjee, S. Hazra, S. Chowdhury, S. Sarkar, K. Chattopadhyay, and A. Pramanik, *J. Photochem. Photobiol. A: Chem.*, 2018, **364**, 635-644.