Electronic Supplementary Information

A novel porphyrin-based near-infrared fluorescent probe for hypochlorite detection and its application *in vitro* and *in vivo*

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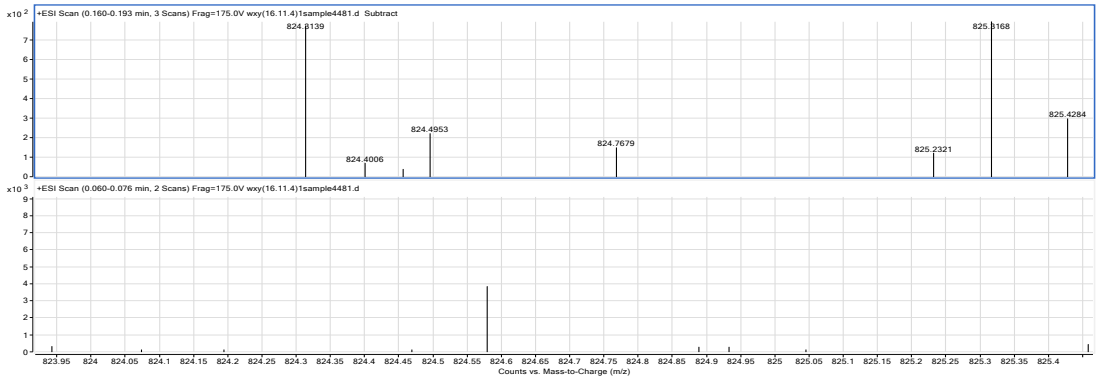
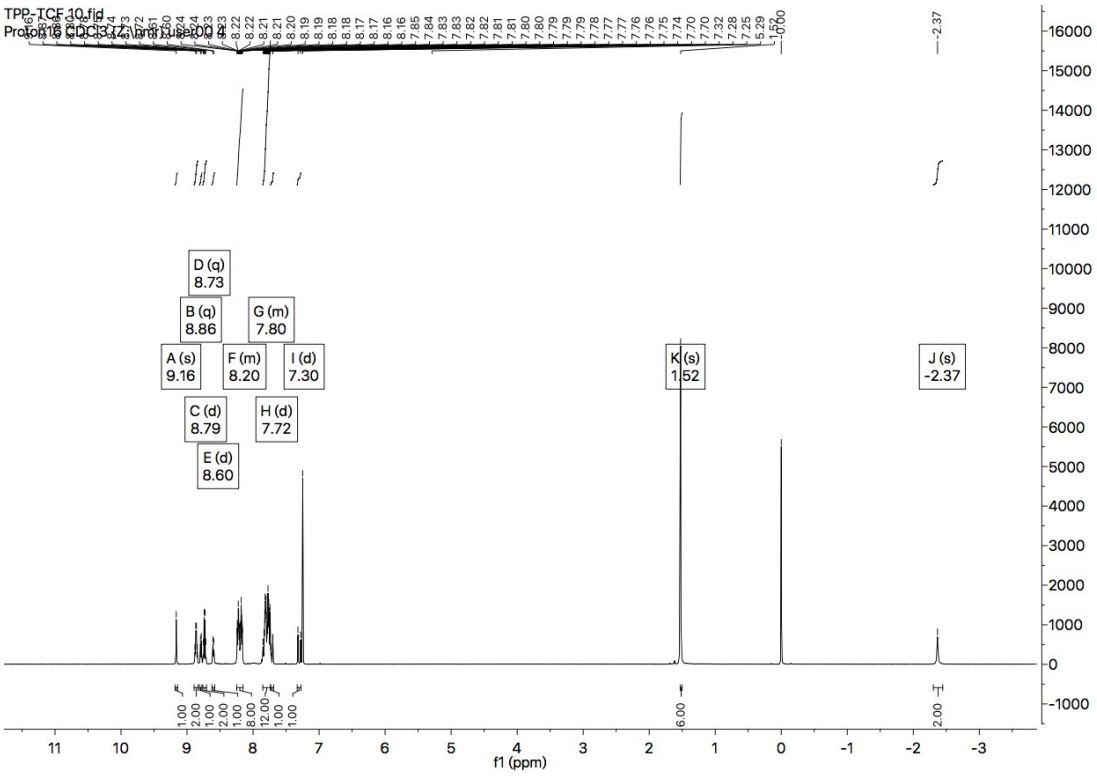
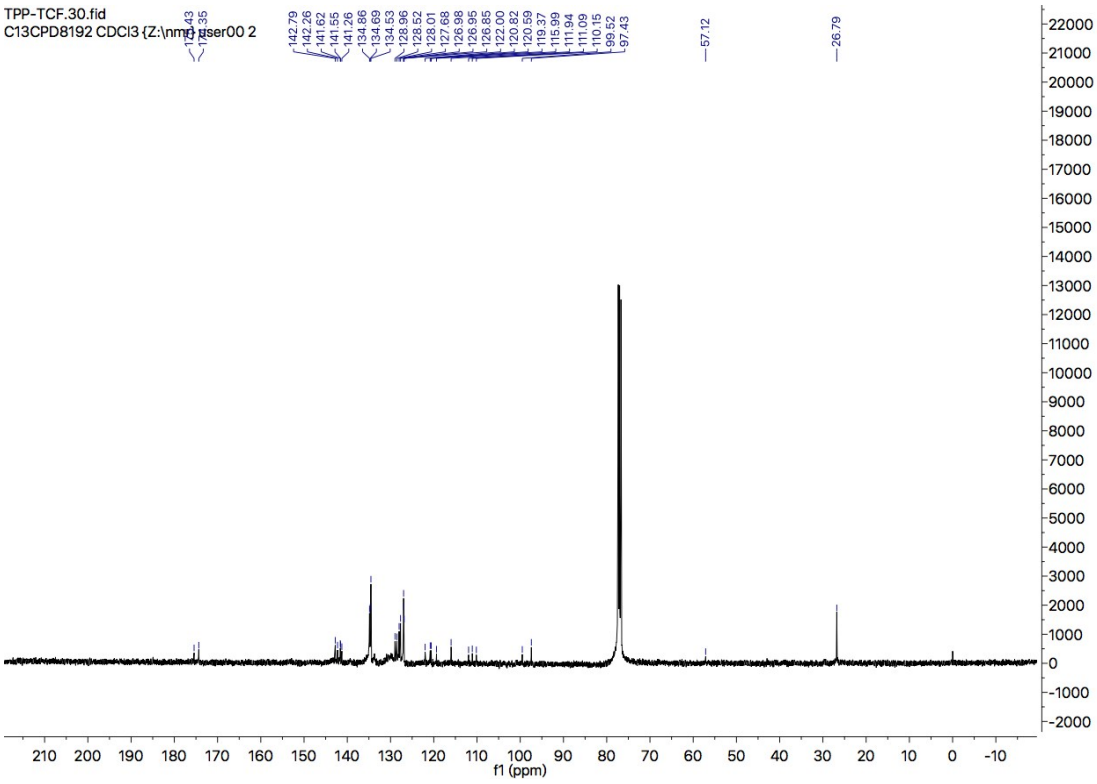
1. NMR and MS spectra of TPP-TCF (S1)



HR-MS spectrum of **TPP-TCF**



^{1}H NMR spectrum of **TPP-TCF**



^{13}C NMR spectrum of **TPP-TCF**

2. Anti-interfering ability of TPP-TCF

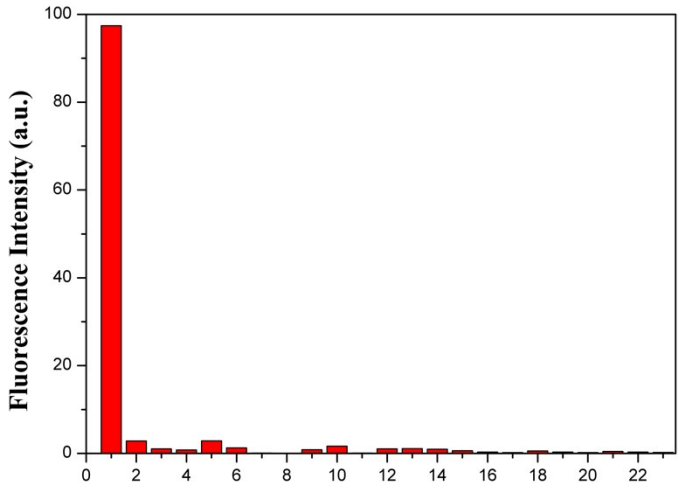


Fig. S2 Fluorescence intensity of **TPP-TCF** (10 μM) at 660 nm before and after addition of various cations and anions in PBS (pH 7.4, 10 mM, containing 20% DMSO). (1: ClO^-, 2: Ag^+, 3: Fe^{3+}, 4: Fe^{2+}, 5: Cu^{2+}, 6: Zn^{2+}, 7: Co^{2+}, 8: Mn^{2+}, 9: Ni^{2+}, 10: Mg^{2+}, 11: Ca^{2+}, 12: Al^{3+}, 13: Na^+, 14:

K^+, 15: Cl^-, 16: Br^-, 17: I^-, 18: F^-, 19: NO_3^-, 20: NO_2^-, 21: SO_4^{2-}, 22: SCN^-, 23: $S_2O_3^-$). $[ClO^-]$=150 μM, $[Ag^+] = [Fe^{3+}] = [Fe^{2+}] = [Cu^{2+}] = [Zn^{2+}] = [Co^{2+}] = [S^{2-}] = [Mn^{2+}] = [Ni^{2+}] = [Mg^{2+}] = [Ca^{2+}] = [Al^{3+}] = [Na^+] = [K^+] = [Cl^-] = [Br^-] = [I^-] = [F^-] = [NO_3^-] = [NO_2^-] = [SO_4^{2-}] = [SCN^-] = [S_2O_3^-]$ = 1 mM

3. Time-dependent plot of fluorescence intensity

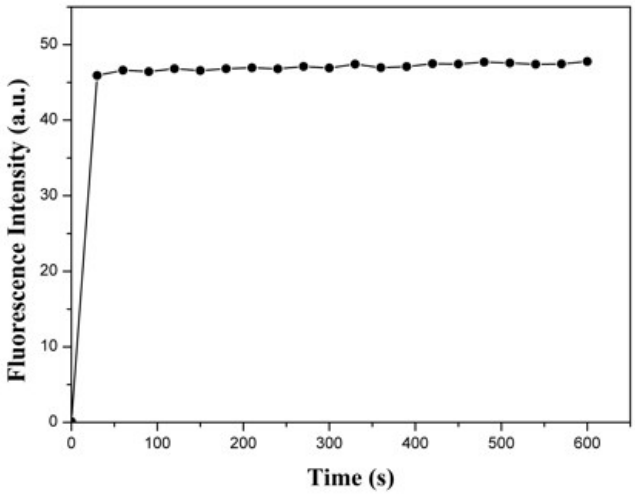


Fig. S3 Time-dependent plot of fluorescence intensity versus time for TPP-TCF (10 μM) upon addition of 100 μM NaClO in PBS (pH 7.4, 10 mM, containing 20% DMSO). λ_{ex} = 488 nm; λ_{em} = 660 nm.

4. The photostability of TPP-TCF

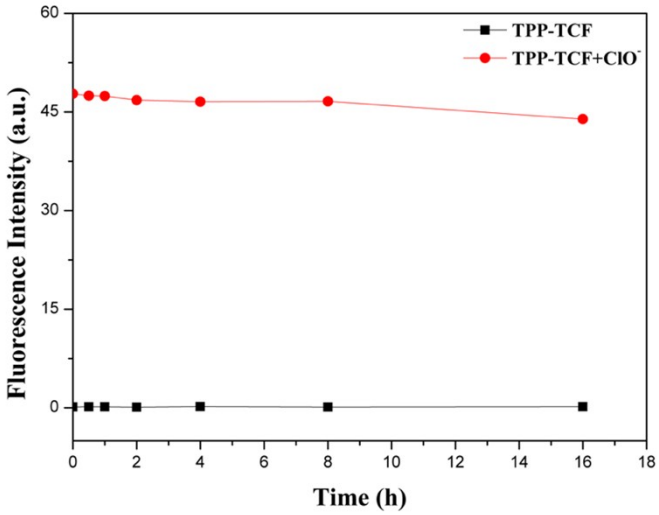


Fig. S4 Change in the fluorescence intensity of TPP-TCF (10 μM) in the absence or presence of NaClO with light irradiation time at 488 nm. λ_{ex} = 488 nm; λ_{em} = 660 nm.

5. Calculation of quantum yield

The quantum yields of **TPP-TCF** was determined according to the equation [S1]:

$$\Phi_{un} = \Phi_{ref} \cdot \frac{\eta_{un}^2 \cdot A_{ref} \cdot OD_{un}}{\eta_{ref}^2 \cdot A_{un} \cdot OD_{ref}}$$

where A is the area under the fluorescence spectra curve and *OD* is the optical density of the compound at the excitation wavelength, 422 nm, η is the refractive index of the solvent used. The standard used for the measurement of the fluorescence quantum yield was TPP (0.11 in toluene).

6. Concentration-dependent plot of fluorescence intensity

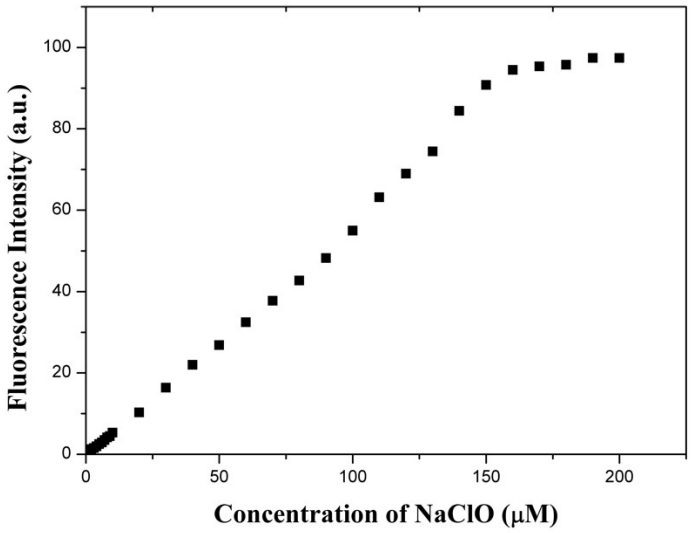


Fig. S6 Concentration-dependent plot of fluorescence intensity versus time for TPP-TCF (10 μM) upon addition of NaClO (0-200 μM) in PBS (pH 7.4, 10 mM, containing 20% DMSO). λ_{ex} = 488 nm; λ_{em} = 660 nm.

7. The response curve of TPP-TCF towards NaClO

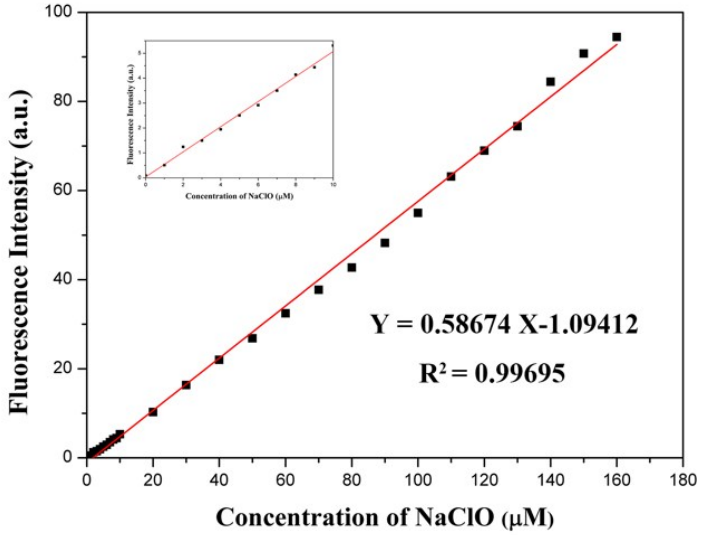


Fig. S7 The linear fitting of fluorescence intensity of TPP-TCF (10 μM) towards concentrations of NaClO (0-160 μM) in PBS (pH 7.4, 10 mM, containing 20% DMSO). λ_{ex} = 488 nm; λ_{em} = 660 nm.

8. The cytotoxicity of TPP-TCF

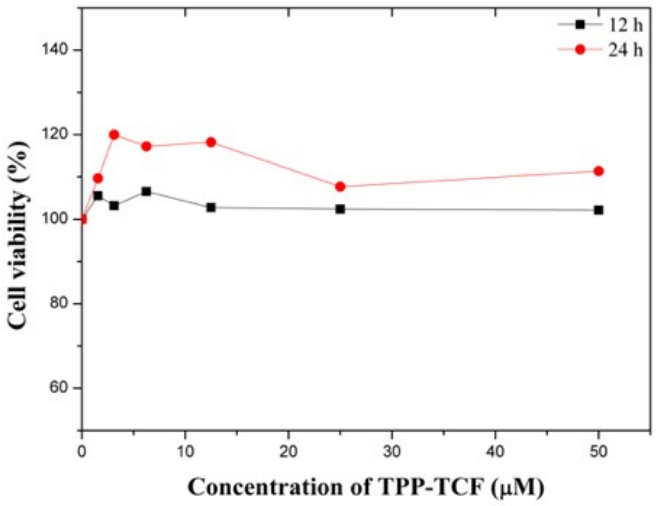


Fig. S8 Changes of cell viability influenced by **TPP-TCF** at different concentrations for 12 h and 24 h.

9. HR-MS spectrum of TPP-TCF reacted with NaClO

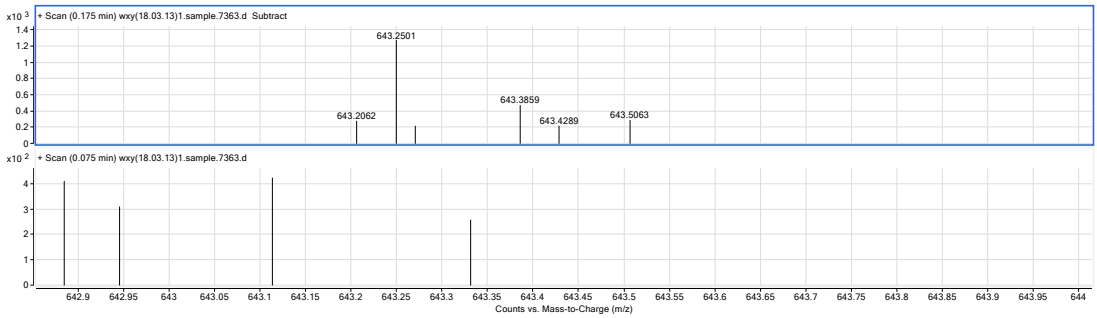


Fig. S9 HR-MS spectrum of the product of **TPP-TCF** reacted with NaClO.