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Synthesis and bioapplication of a highly selective and sensitive fluorescent probe for HOCl based on a phenothiazine-dicyanoisophorone conjugate with large Stokes shift

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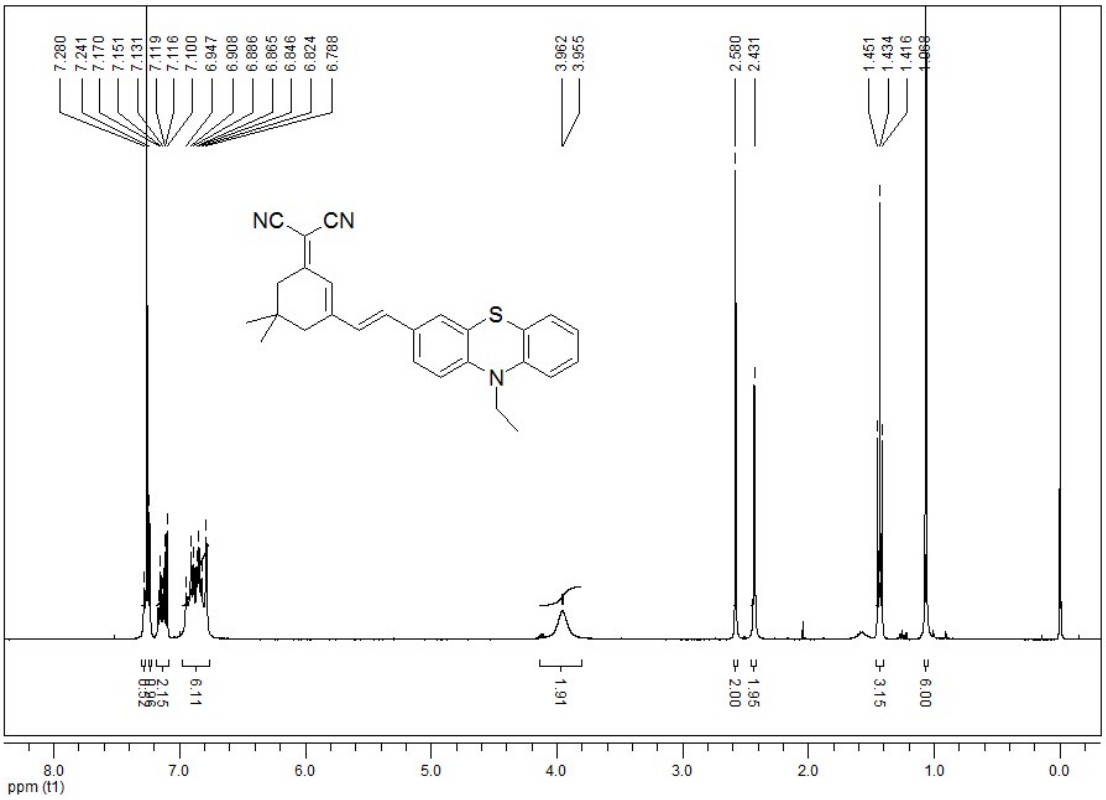

Figure S1 ^{1}H NMR of **Dcp-EPtz** (400 MHz, $CDCl_3$).

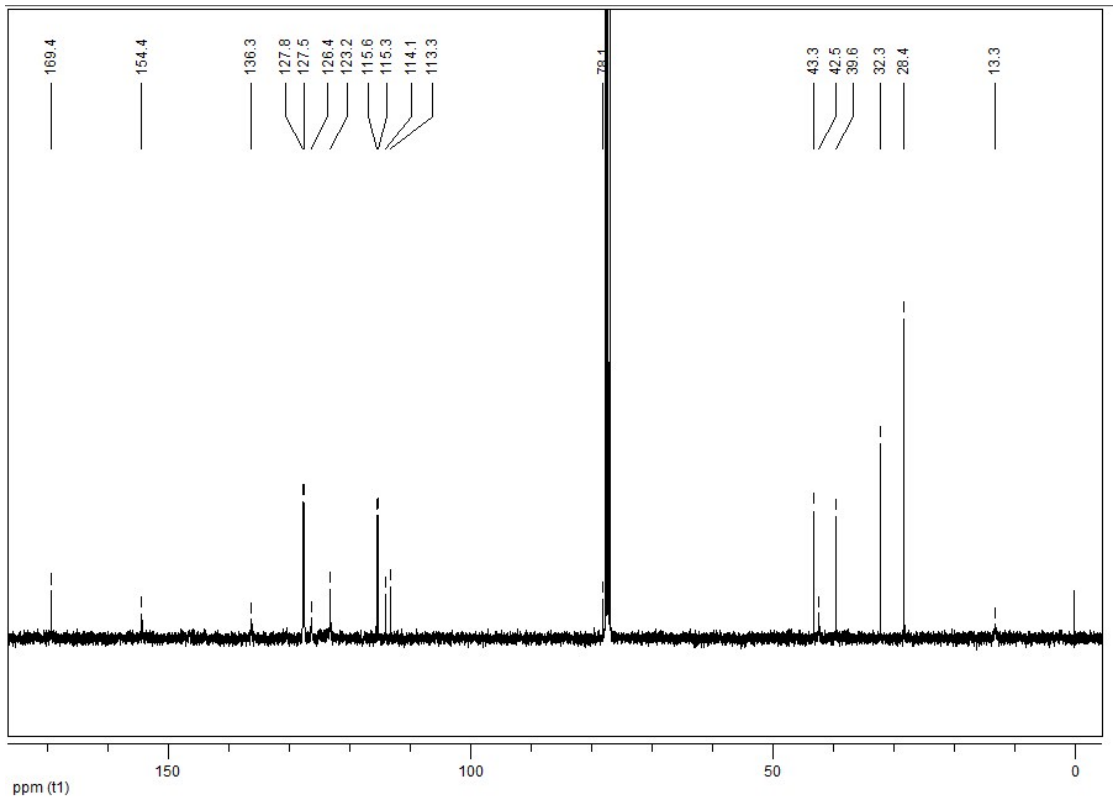

Figure S2 ^{13}C NMR of **Dcp-EPtz** (100 MHz, $CDCl_3$).

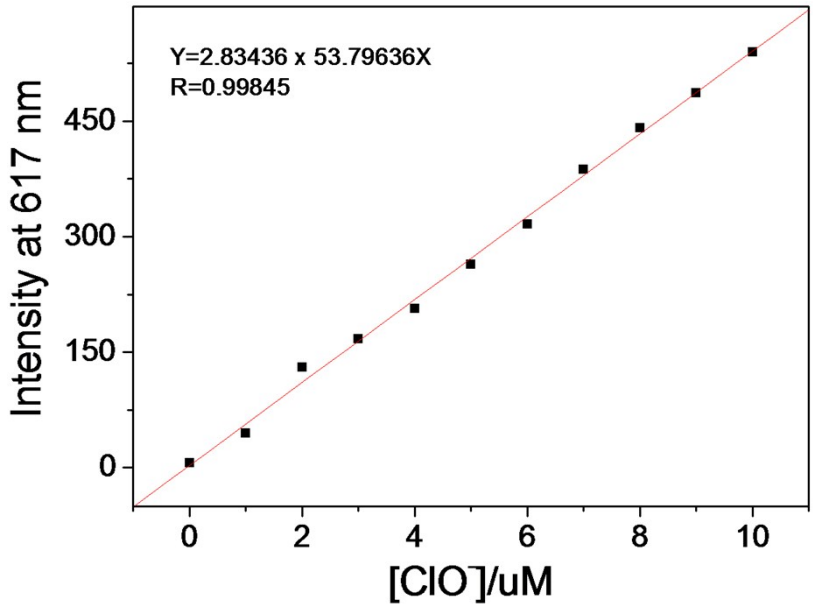

Figure S3 Emission (at 617 nm) of **L** at different concentrations of ClO^-A linear relationship between the fluorescence intensity and the ClO^- concentration could be obtained in the 0-10.0 μM concentration range (R = 0.998).The detection limit was then calculated with the equation: detection limit = 3σbi/m, where σbi is the standard deviation of blank measurements (3σbi = 2.1113, derived from ten measurements), m is the slope between intensity versus sample concentration. The detection limit was measured to be 3.9×10^{-8} M.

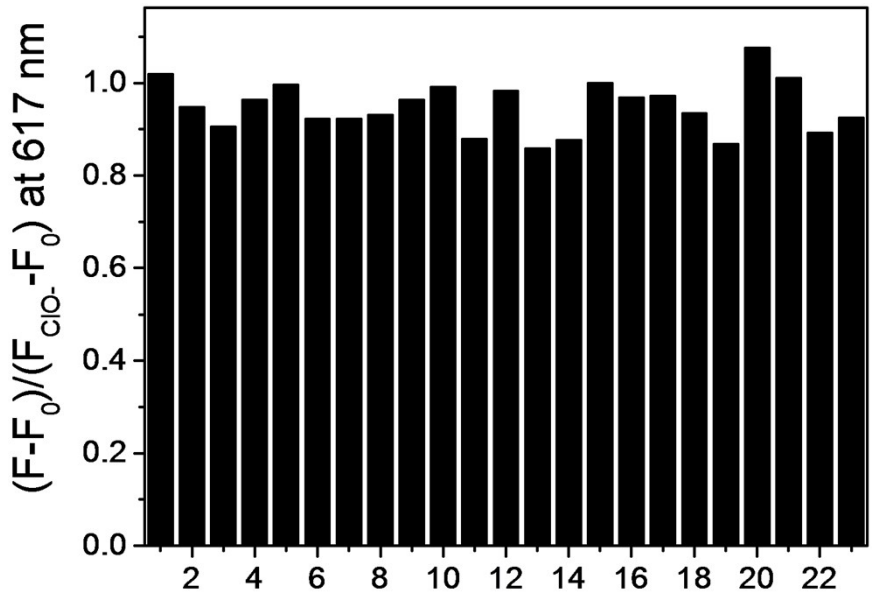

Figure S4 Change ratio $(F - F_0)/(F_{ClO^-} - F_0)$ of fluorescence intensity of **L** (5 μM) upon the addition of 10.0 equiv. ClO^- in the presence of 10.0 equiv. other anions and ROS in PBS: ethanol=1:1 (10 mM, pH = 7.4, v/v). 1: AcO^-, 2: Br^-, 3: Cl^-, 4: ClO^-, 5: ClO_4^-, 6: CO_3^{2-}, 7: F^-, 8: H_2O_2, 9: $H_2PO_4^-$, 10: HCO_3^-, 11: HPO_4^{2-}, 12: HSO_4^-, 13: NO, 14: NO_2^-, 15: NO_3^-,16: O_2^-,17: ·OH, 18: $ONOO^-$, 19: PO_4^{3-}, 20: SO_3^{2-}, 21: SO_4^{2-}, 22: TBHP, 23: O_2^1.

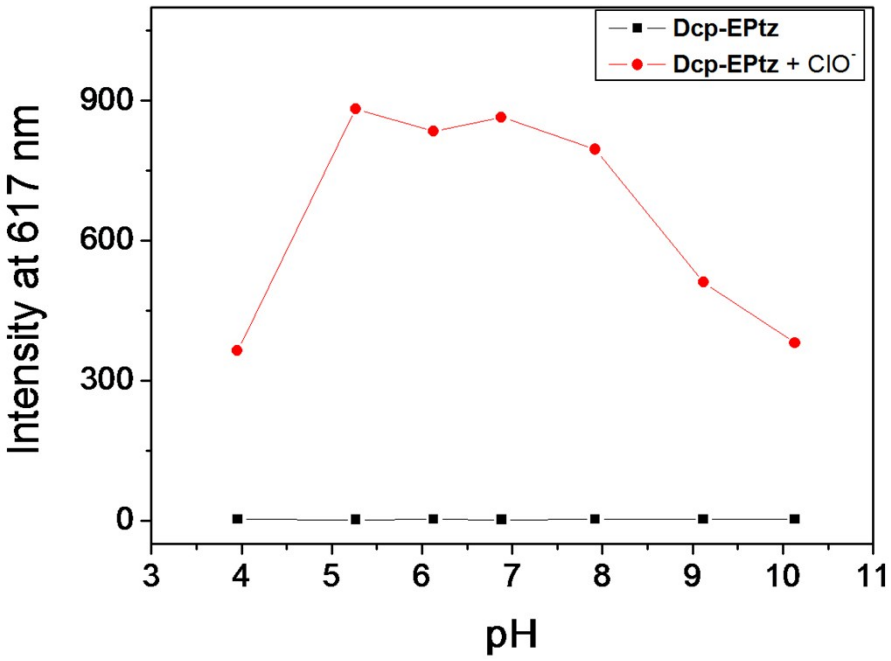

Figure S5 Fluorescence intensity of **Dcp-EPtz** (5 μM) in the absence and presence of NaClO (10.0 equiv.) at various pH values (from 4.0 to 10.0) in PBS: ethanol=1:1 (10 mM, pH = 7.4, v/v) at 617 nm. λ_{ex} = 475 nm, slit: 5 nm, 5 nm.

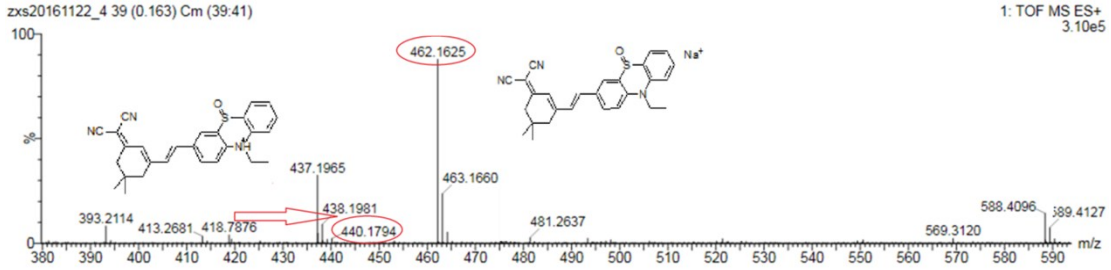

Figure S6 HRMS spectra of **Dcp-EPtz** upon addition of ClO^- (2.0 equivalents). The peak at [**Dcp-EPtzO** + Na]$^+$ = 462.1625 (calc. *m/z* 462.1616) and a weak peak at [**Dcp-EPtzO** + H]$^+$ = 440.1794 (calc. *m/z* 440.1791) corresponded to **Dcp-EPtzO**, respectively.