

Electronic Supplementary Information

Three-Input-Three-Output Logic Operations based on Absorption and Fluorescence Dual-mode from a Thiourea Compound

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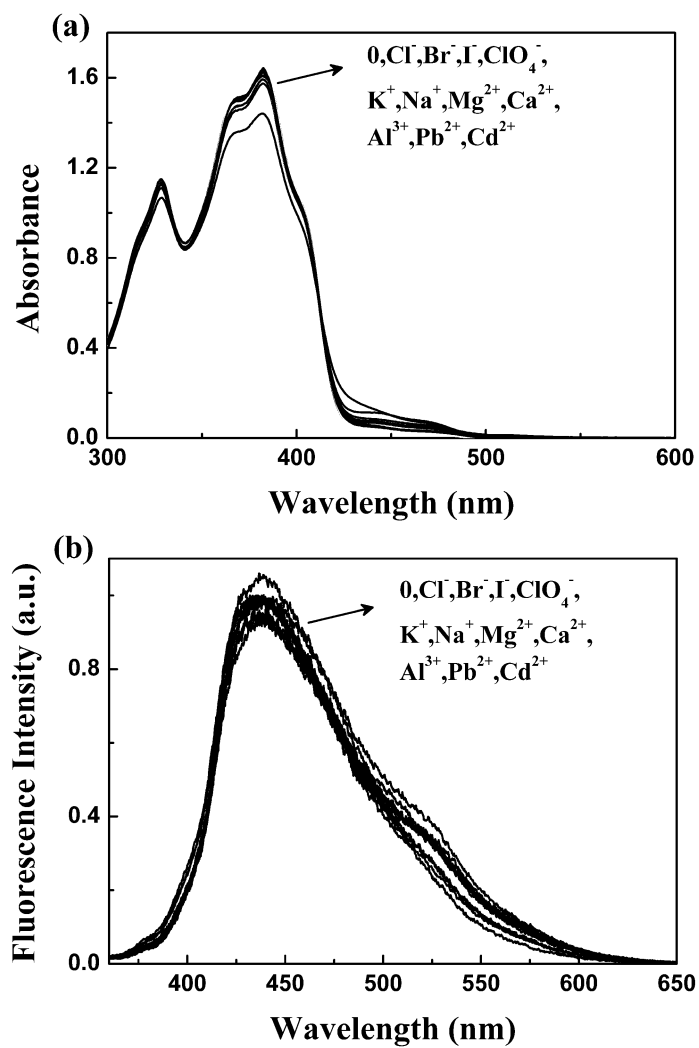


Fig. S1 Absorption (a) and normalized fluorescence (b, $\lambda_{\text{ex}}=342$ nm) response of receptor **1** in the presence of various interference ions (1 mM).

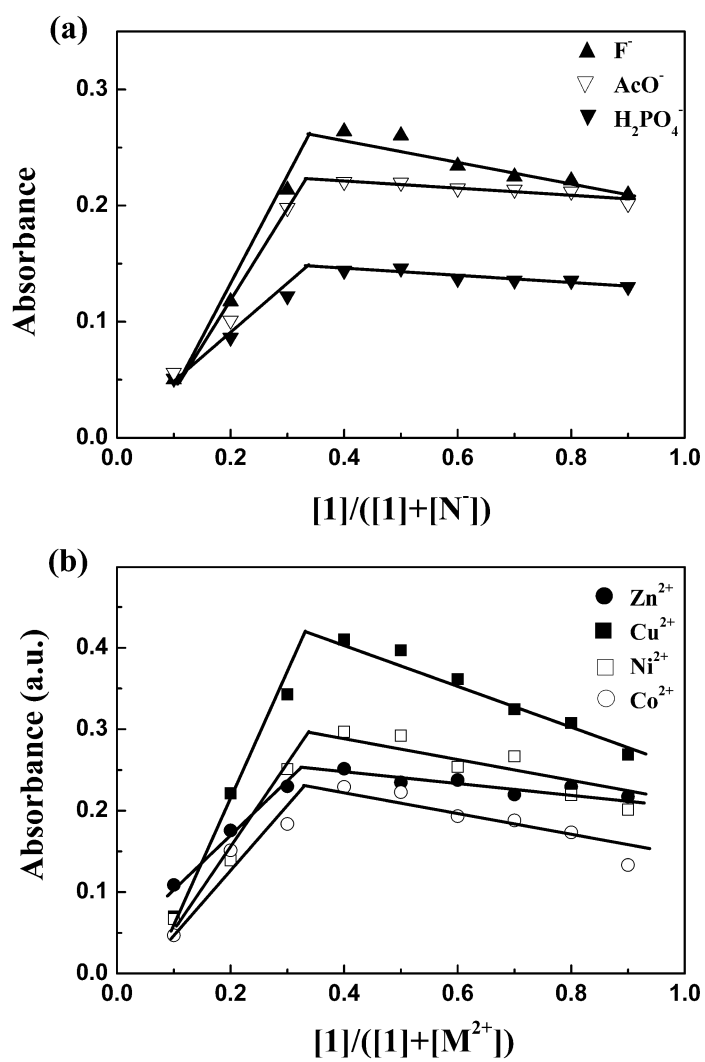


Fig. S2 The job's plots for determining the stoichiometry of receptor **1** with anions (a) and cations (b). The total concentration of receptor **1** and ions was $50 \mu M$.

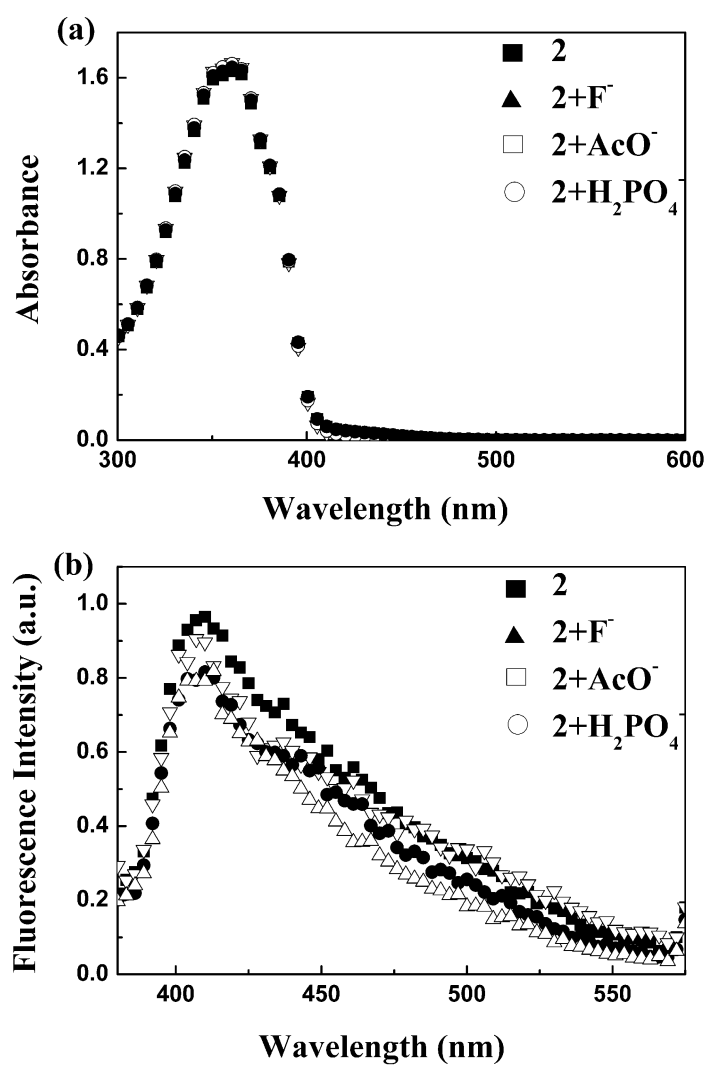


Fig. S3 Absorption (a) and normalized fluorescence (b, $\lambda_{\text{ex}}=271$ nm) spectra of receptor **2** ($50 \mu\text{M}$) in the presence of anions (5 equiv) in DMSO/H₂O solution (V:V = 9:1).

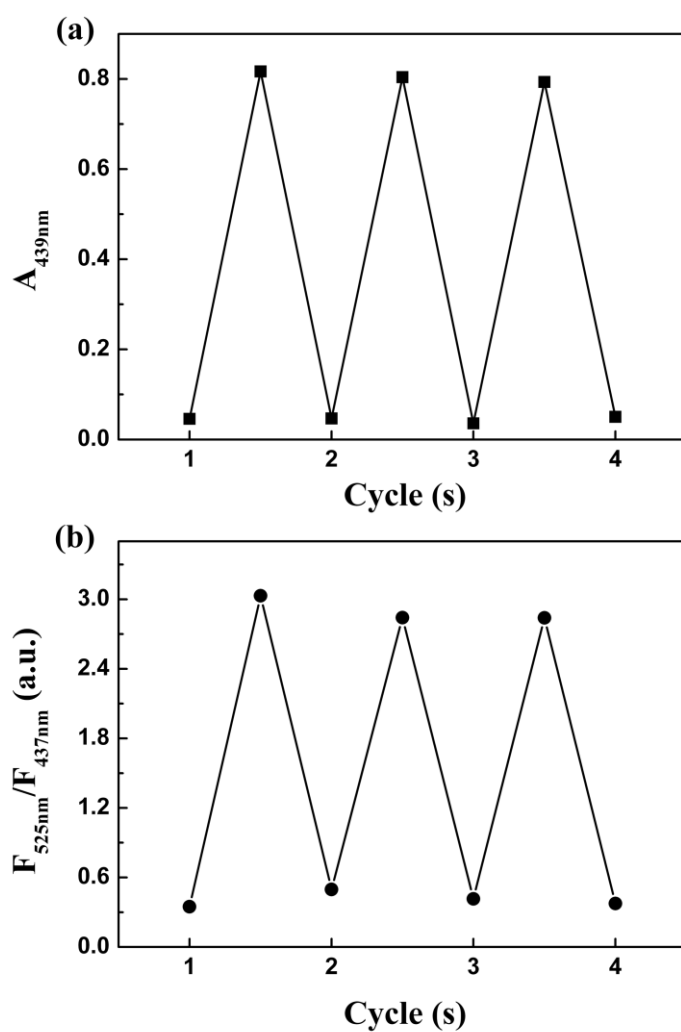


Fig. S4 Reversible absorbance (a) and fluorescence (b) titration responses of receptor **1** ($50 \mu\text{M}$) bonding to F^- (5 equiv) by the introduction of Ca^{2+} (5 equiv) to the system. The cyclic index is the number of alternating cycles.

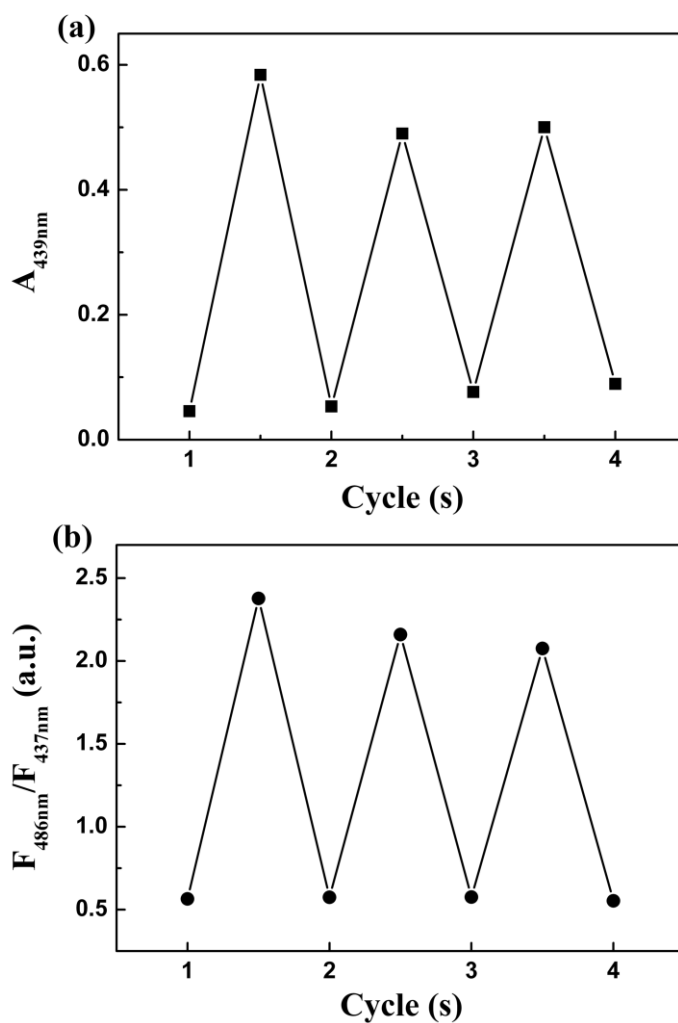


Fig. S5 Reversible absorbance (a) and fluorescence (b) titration responses of receptor **1** ($50 \mu\text{M}$) bonding to Zn^{2+} (5 equiv) by the introduction of EDTA (sodium salt, 10 equiv) to the system. The cyclic index is the number of alternating cycles.

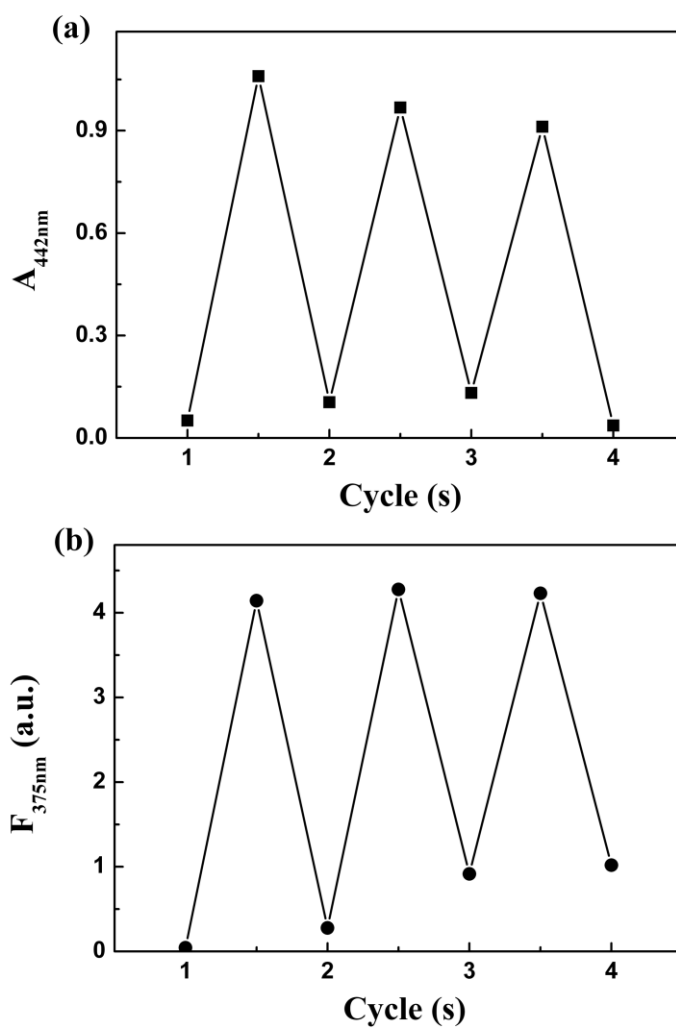


Fig. S6 Reversible absorbance (a) and fluorescence (b) titration responses of receptor **1** ($50 \mu\text{M}$) bonding to Cu^{2+} (5 equiv) by the introduction of EDTA (sodium salt, 20 equiv) to the system. The cyclic index is the number of alternating cycles.

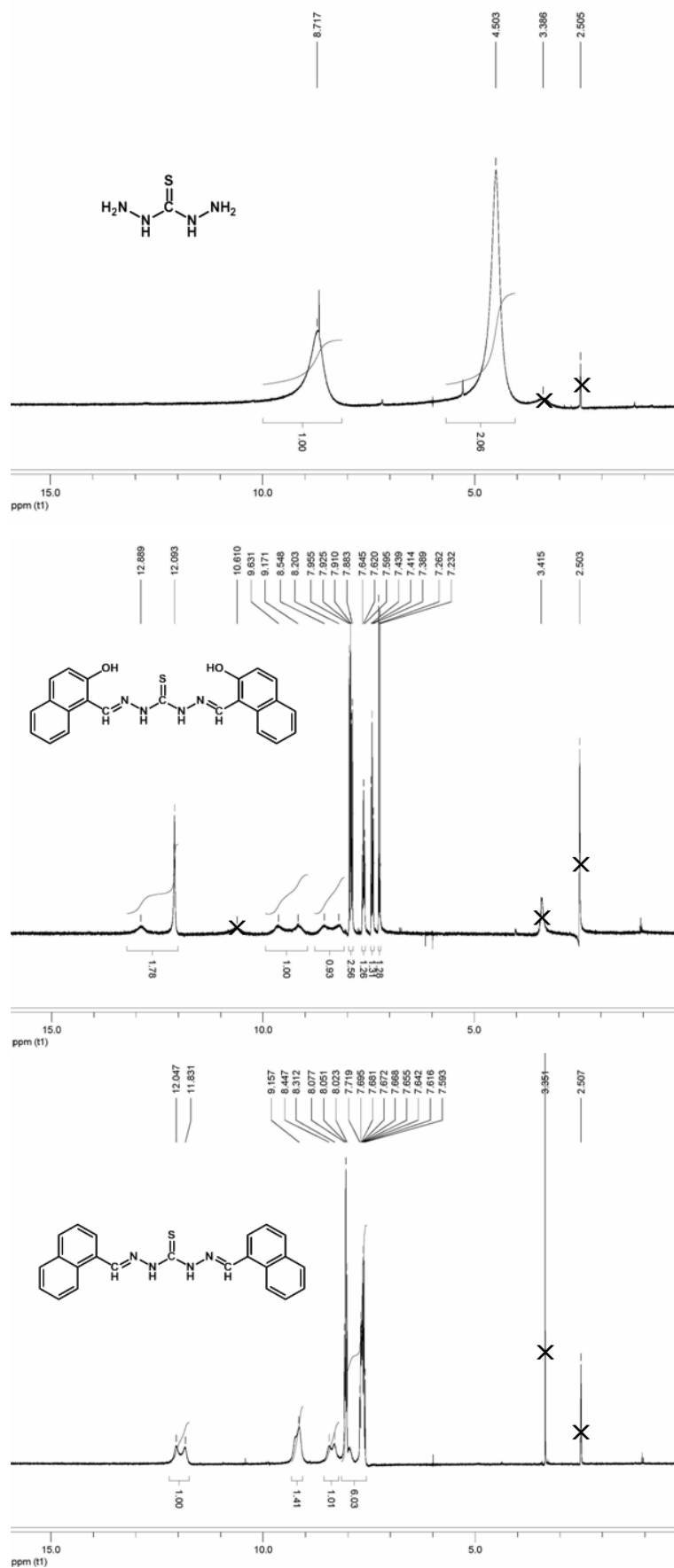


Fig. S7 ¹H NMR spectra of thiocarbohydride, receptor **1** and **2**.