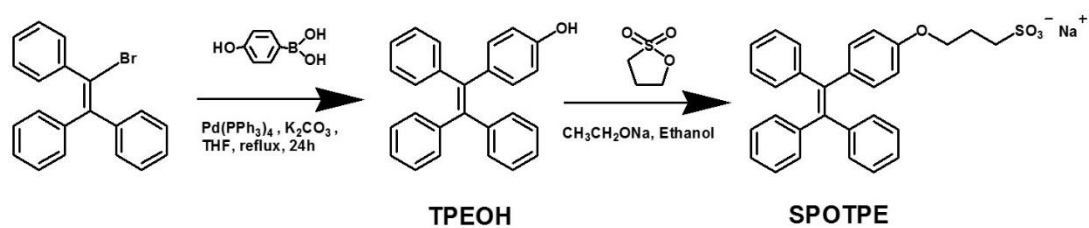


Self-Assembly Cationic Cellulose Nanocomplex via Electrostatic Interaction for the Fluorescent Detection of Fe³⁺ Ions

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Scheme S1. Synthesis of SPOTPE.

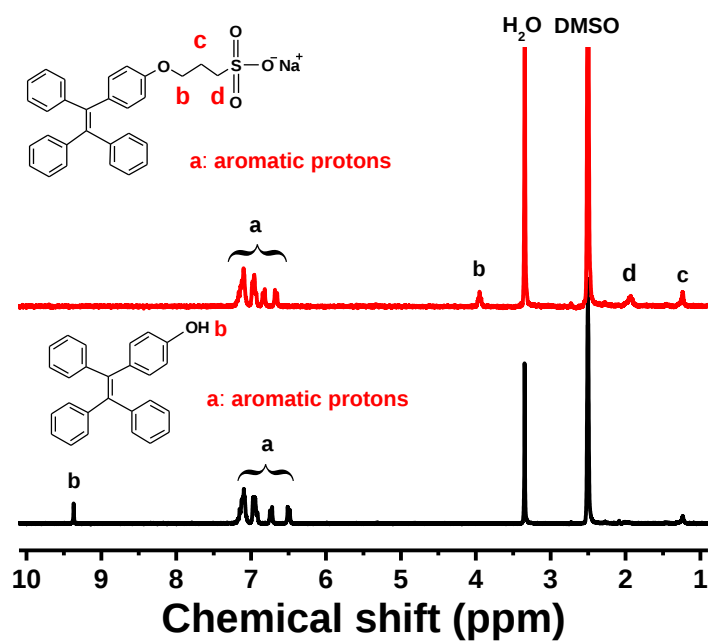


Figure S1. ^1H NMR spectra of TPEOH and SPOTPE in $\text{DMSO-}d_6$ at 25 °C.

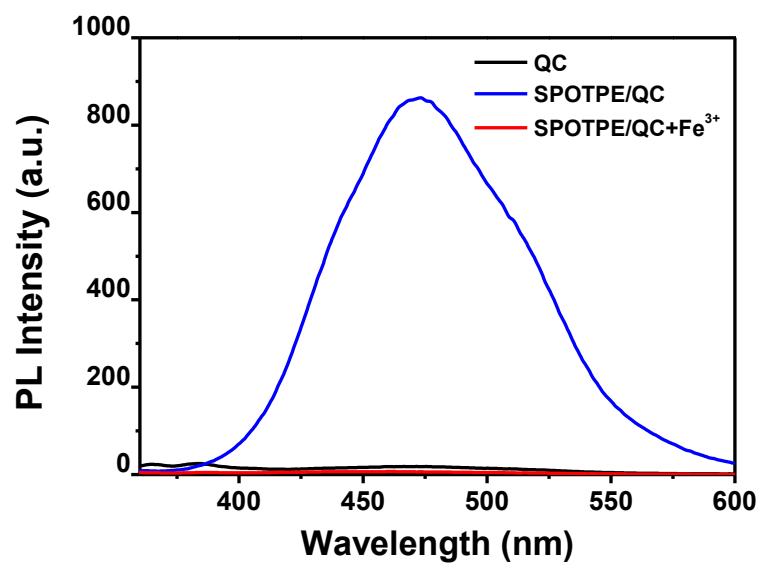


Figure S2. Fluorescence emission spectra of QC, SPOTPE/QC, and SPOTPE/QC+Fe³⁺ aqueous solutions ($c_{\text{QC}}=0.2$ mg/mL, $c_{\text{SPOTPE}}=0.01$ mg/mL, $c_{\text{Fe}^{3+}}=300$ μM).

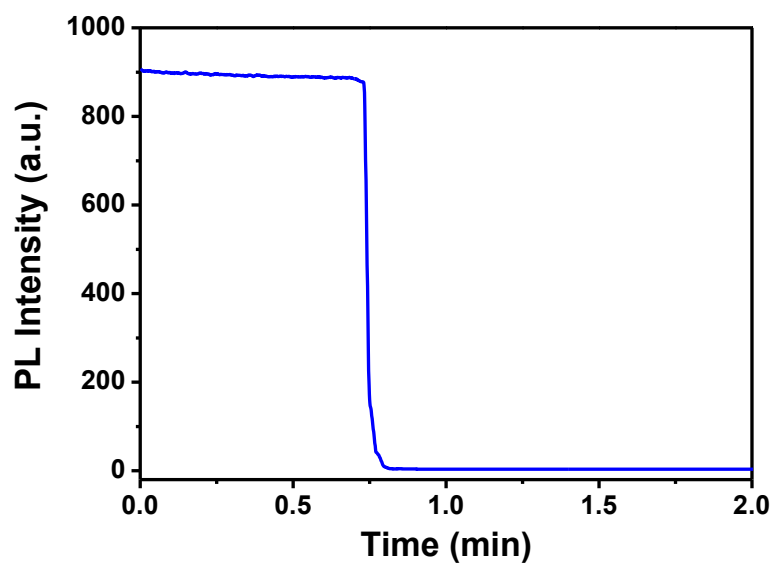


Figure S3. Fluorescence intensity kinetics of SPOTPE/QC solution with the addition of Fe³⁺ ions ($c_{\text{QC}}=0.2$ mg/mL, $c_{\text{SPOTPE}}=0.01$ mg/mL, $c_{\text{Fe}^{3+}}=9$ mM).

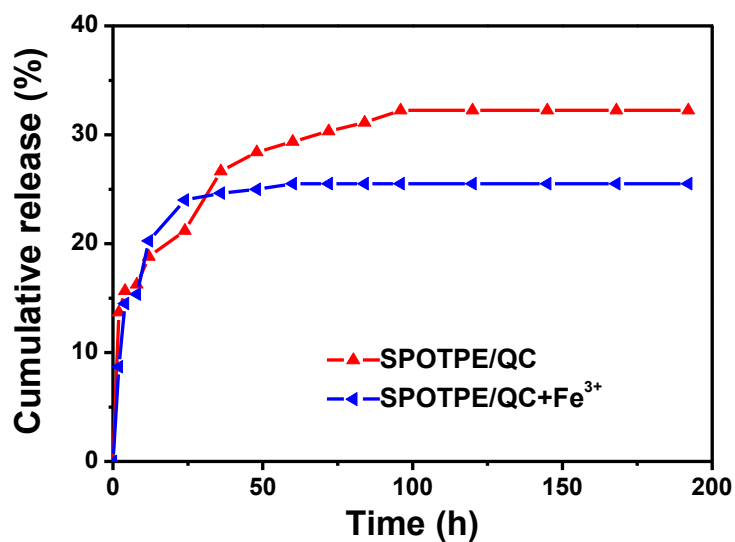


Figure S4. In vitro SPOTPE-released profiles of SPOTPE/QC complex with/without Fe^{3+} ions (300 μM) in water.

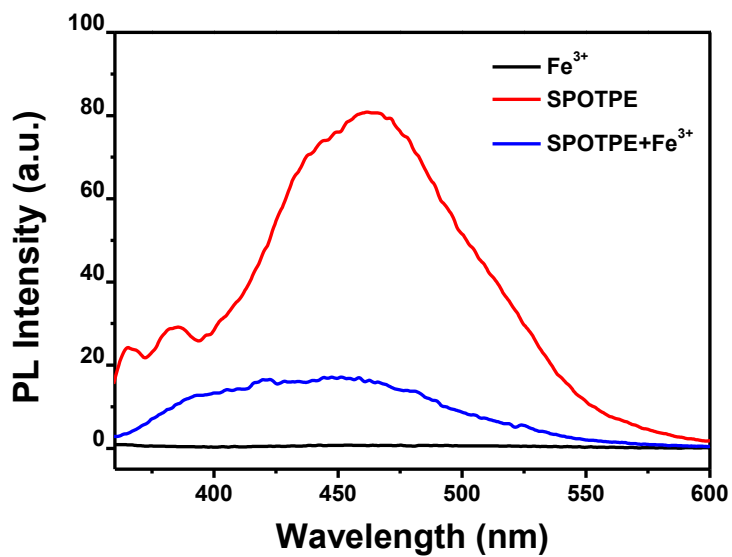


Figure S5. Fluorescence emission spectra of Fe^{3+} , SPOTPE, and SPOTPE+ Fe^{3+} aqueous solutions ($c_{\text{SPOTPE}}=0.2 \text{ mg/mL}$, $c_{\text{Fe}^{3+}}=300 \mu\text{M}$).