chemosensors

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Supplementary Materials

A Simple Visible Recognition Method for Copper Ions Using Dibenzo[*b,j*][1,10]Phenanthroline Scaffold as a Colorimetric Sensor

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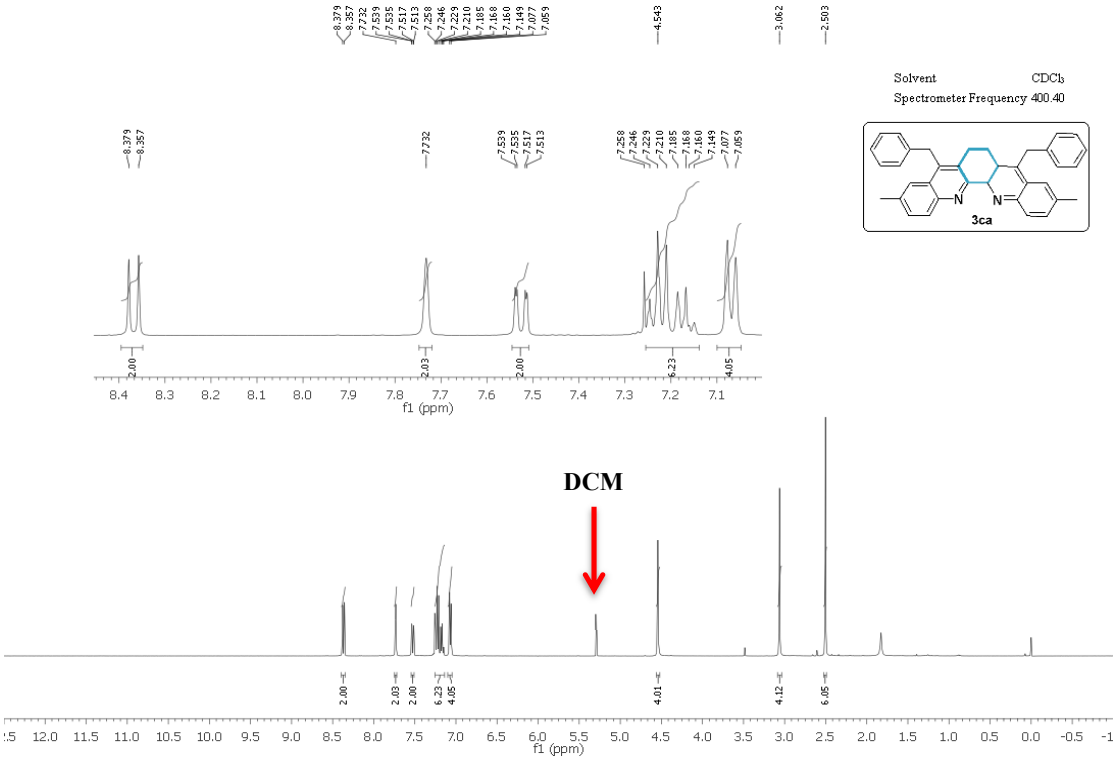

Figure S1. [1]H NMR spectrum of DBPhen.

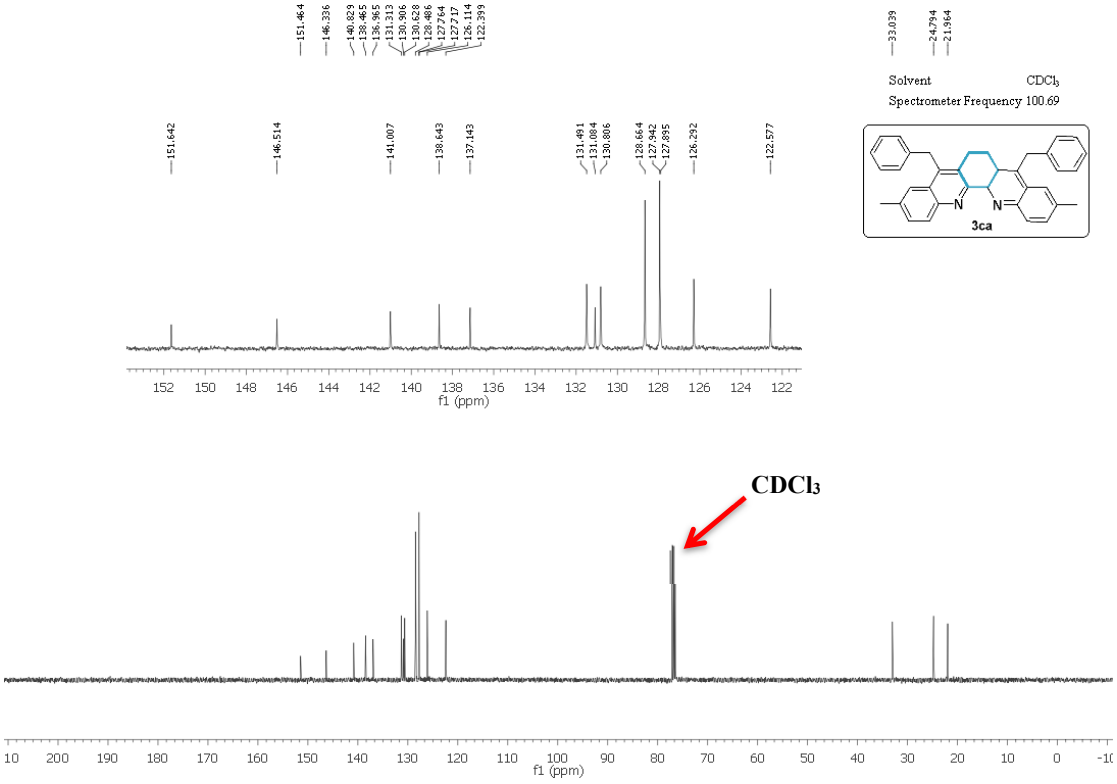

Figure S2. ^{13}C NMR spectrum of DBPhen.

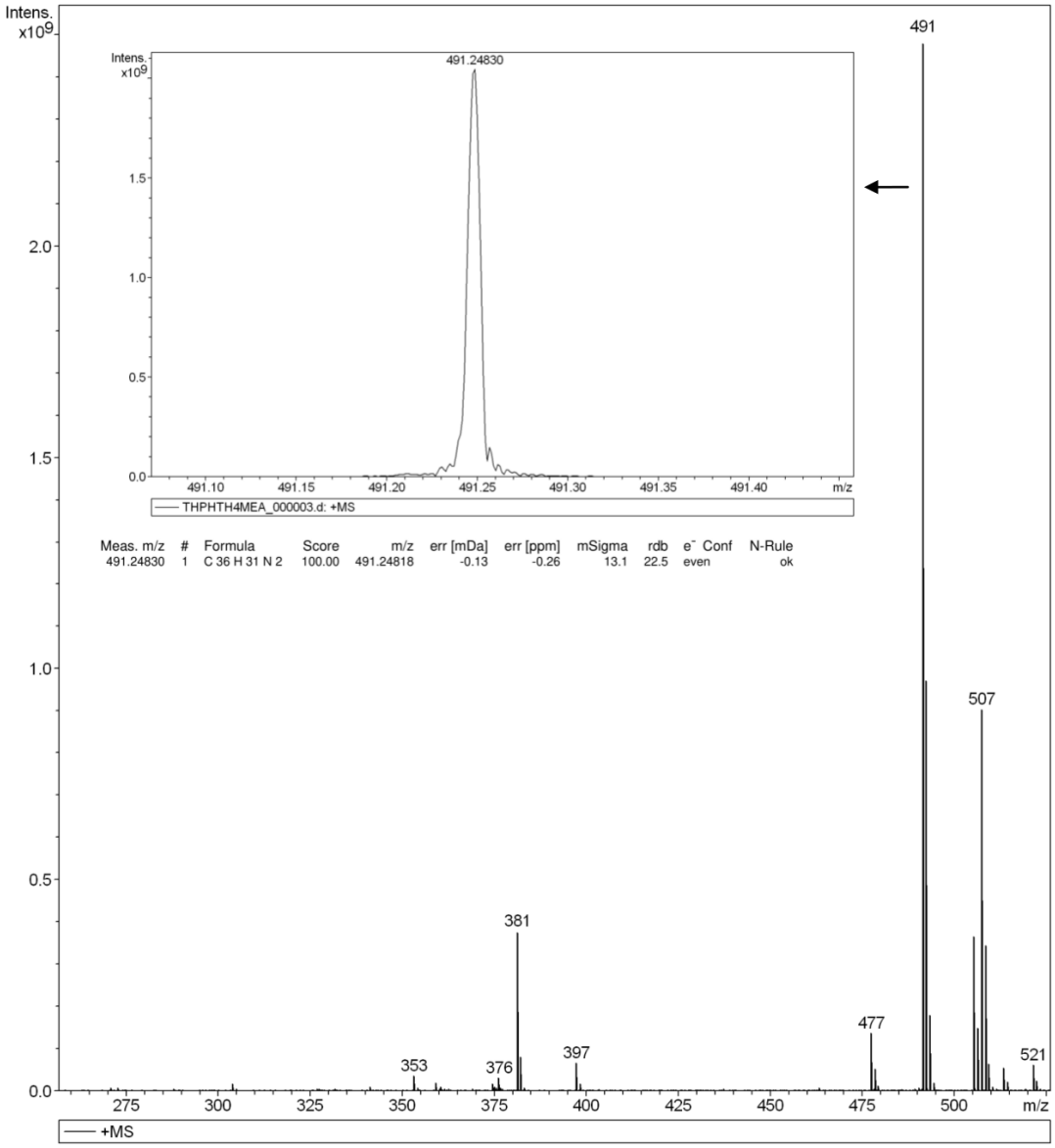

Figure S3. XR FT-MS spectra of DBPhen.

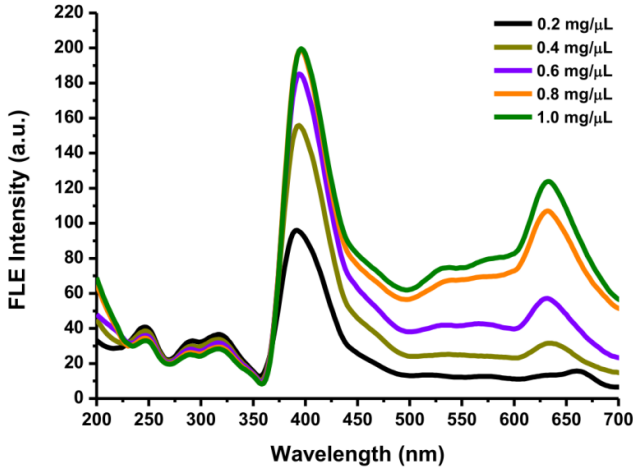

Figure S4. The fluorescence excitation (FLE) spectra spectra of DBPhen with various concentrations (0.2-1.0 μg/mL).

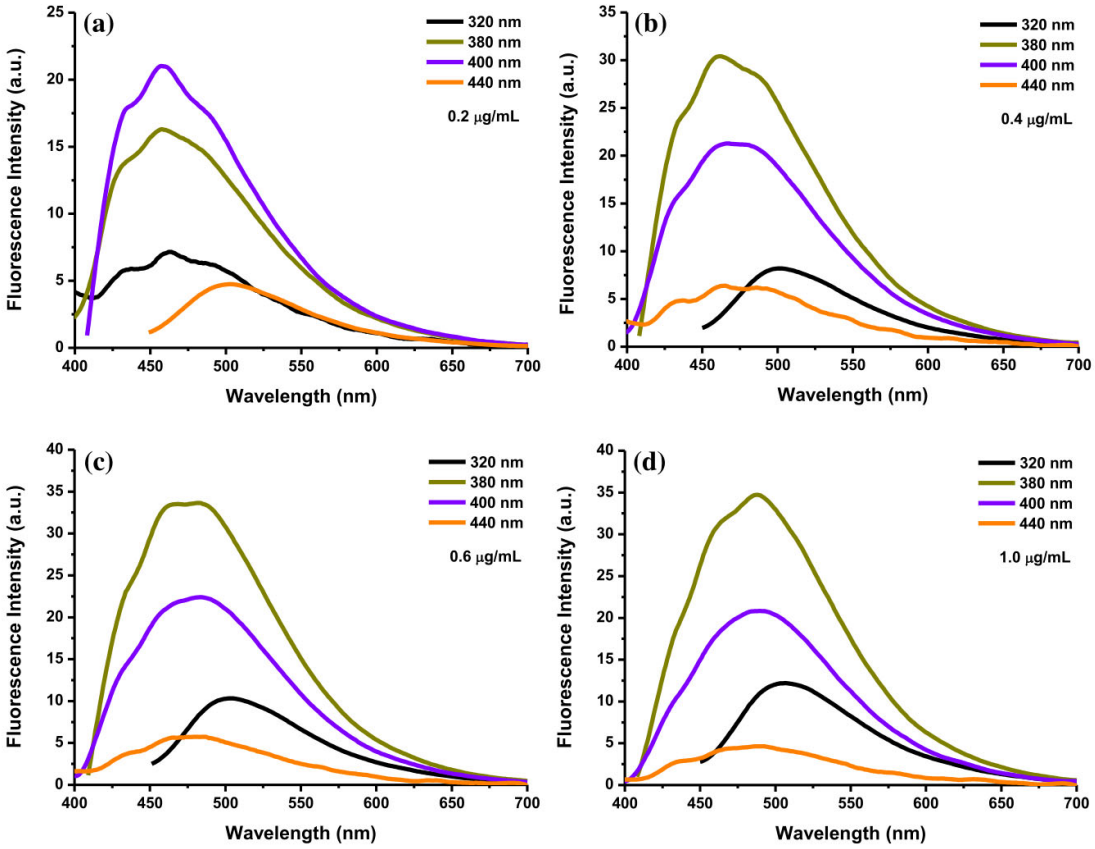

Figure S5. The emission spectra of DBPhen with the concentration of (a) 0.2 μg/mL, (b) 0.4 μg/mL, (c) 0.6 μg/mL, and (d) 1.0 μg/mL excited at 320, 380, 400, and 440 nm.

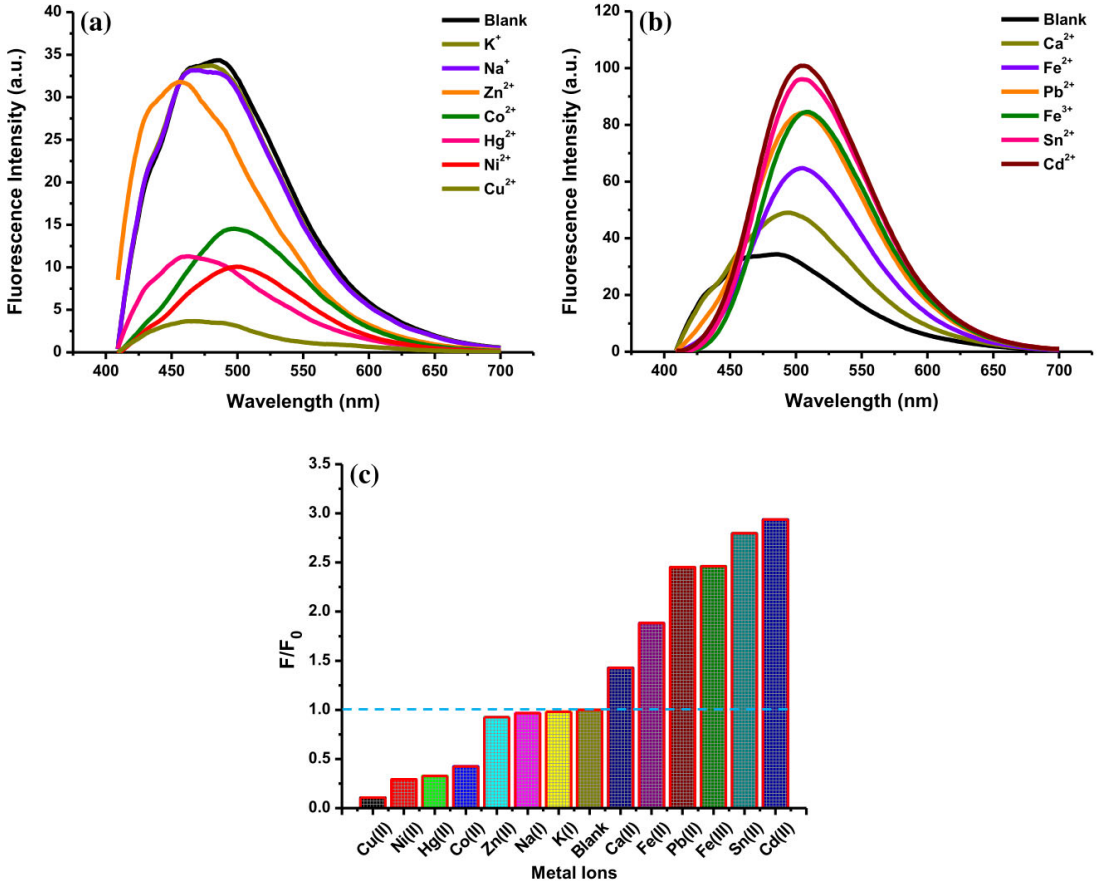

Figure S6. (a) The reducing effect on the emission intensity of DBPhen after interaction with some metal ions, (b) enhancing effect on the emission intensity of DBPhen after interaction with some metal ions, and (c) the relative emission intensities (F/F_0) of DBPhen without and with numerous metal ions. The concentration of metal ions was 1000 μM.

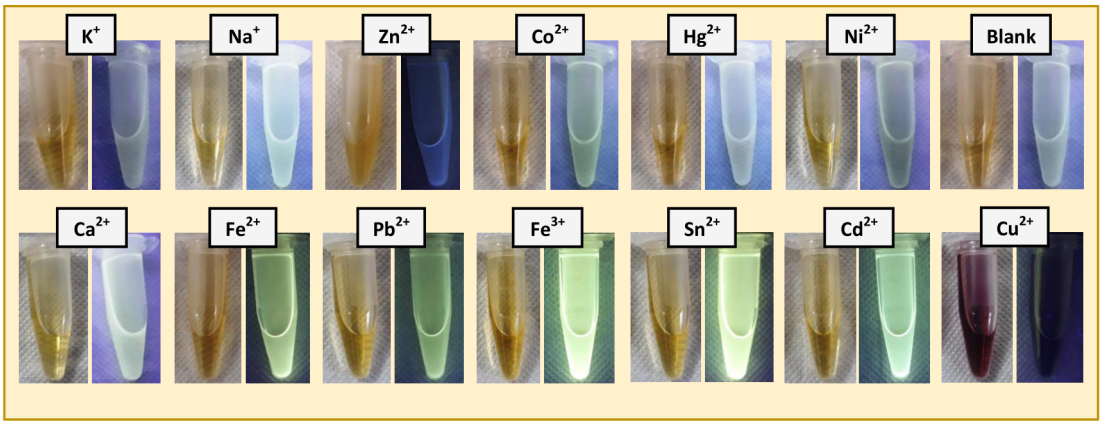

Figure S7. The appearance of DBPhen solution with the addition of numerous metal ions under daylight and UV-light.

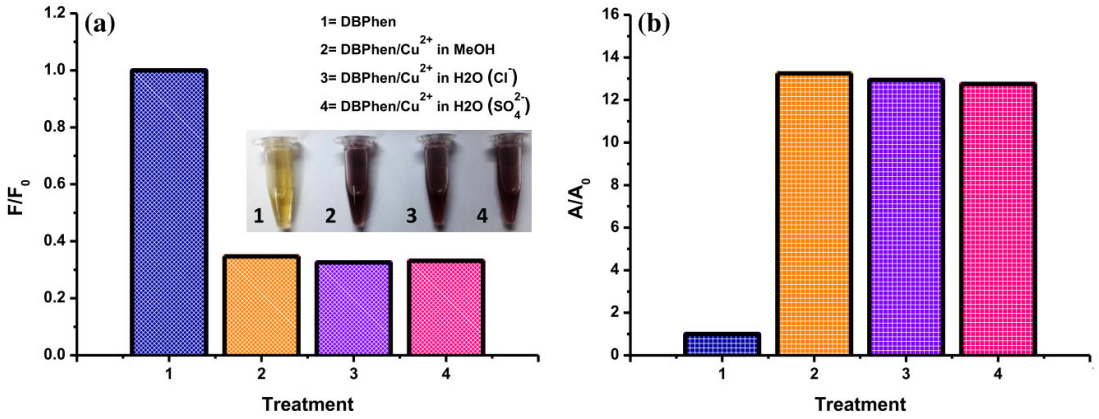

Figure S8. The relative (a) fluorescence emission intensities (F/F_0) and (b) UV-Vis absorbance spectra (A/A_0) of (1) DBPhen, (2) DBPhen/Cu^{2+} in MeOH, (3) DBPhen/Cu^{2+} in H_2O with Cl^-, and (4) DBPhen/Cu^{2+} in H_2O with SO_4^{2-}. The concentration of DBPhen and Cu^{2+} was 0.8 μg/mL and 500 μM, respectively.

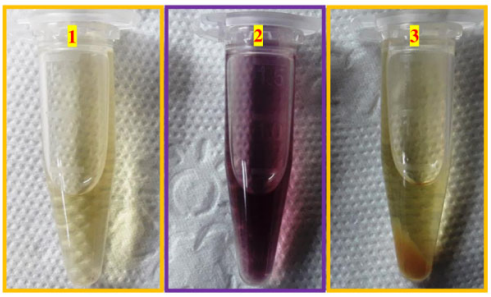

Figure S9. The solution appearance of (1) DBPhen, (2) DBPhen/Cu^{2+}, and (3) DBPhen/Cu^{2+} with the addition of CN^-.

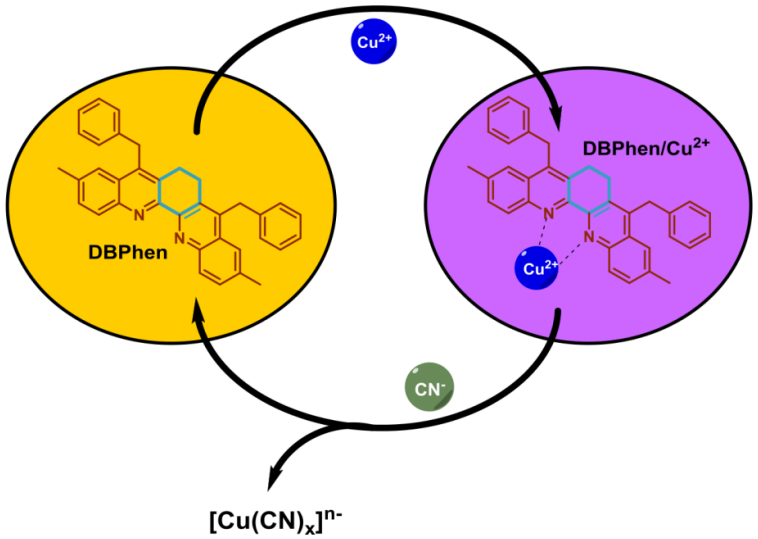

Figure S10. The proposed binding mechanism of the DBPhen/Cu^{2+} complex for CN^-.