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Supporting Information

A Highly Selective Colorimetric Chemosensor for Detection of Nickel Ions in Aqueous Solution

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Interactions of LX with various anions

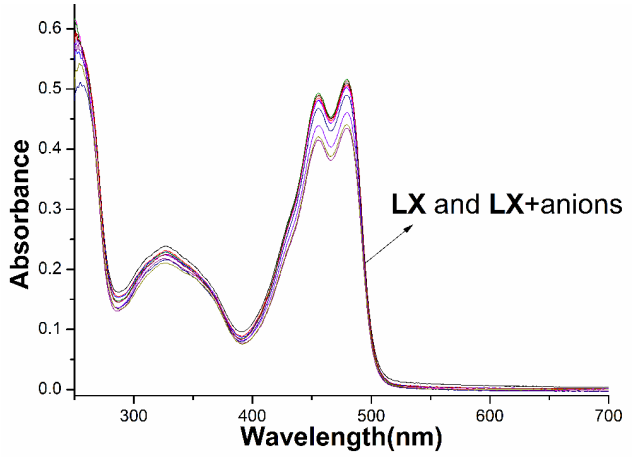

Figure S1. Changes in the UV/Vis spectra of **LX** ($c=2\times10^{-5}$ M) after addition of 50 equivalents various anions in DMSO-H_2O (v/v=1:1) HEPES buffer solutions at pH=7.4.

Ratiometric calibration curve

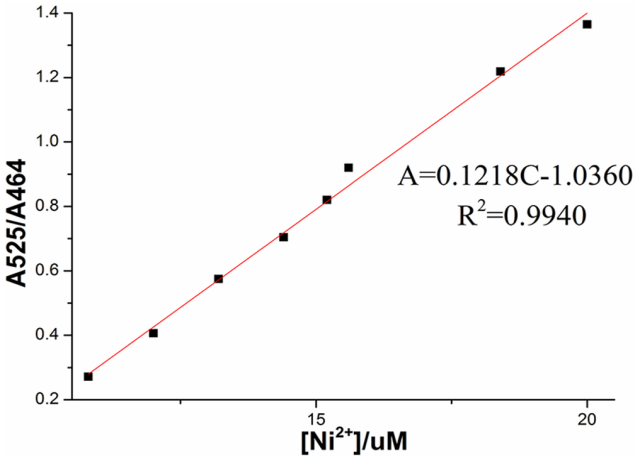

Figure S2. Ratiometric calibration curve A525/A464 as a function of Ni^{2+} concentration.

Determination of association constant

The association constants (K_a) of **LX** with Ni^{2+} were determined based on the absorbance titration curve using the Benesi-Hildebrand equation as follows: where A and A_0 represent the absorbance of host in the presence and absence of ions, respectively, A_{max} is the saturated absorbance of host in the presence of excess amount of ions; [G] is the concentration of Ni^{2+} added.

$$\frac{1}{A_{max}-A_0} = \frac{1}{A_1-A_0}\left[\frac{1}{K_a[G]^2} + 1\right]$$

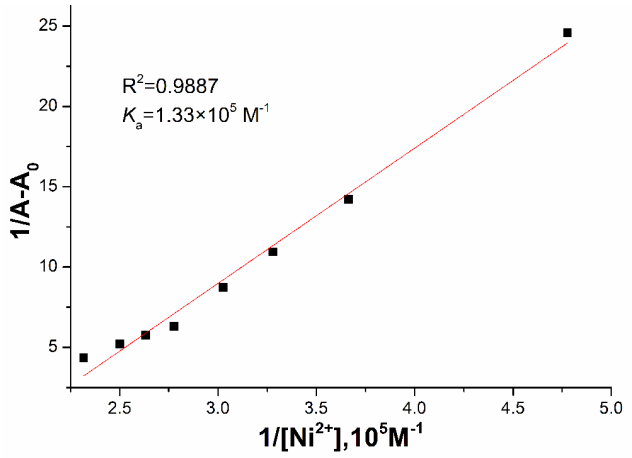

Figure S3. Benesi-Hildebrand plot of **LX** with Ni^{2+}.

The detection limit of LX with Ni^{2+}

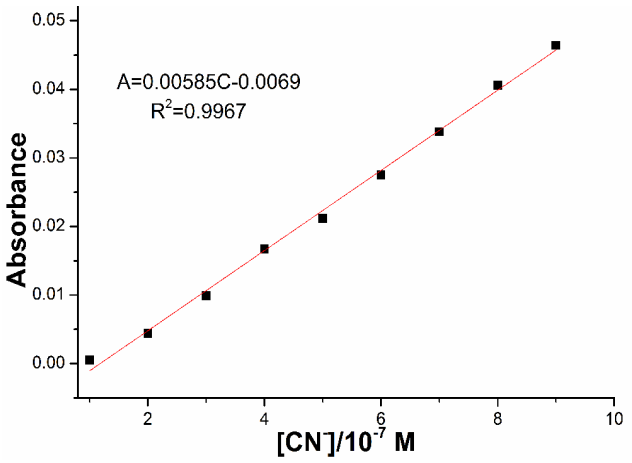

Figure S4. Plot of the absorption at 525 nm for a mixture of **LX** ($c=2\times10^{-5}$ M) in DMSO-H_2O (v/v=1:1) HEPES buffer solutions at pH=7.4.

^{1}H NMR experiments

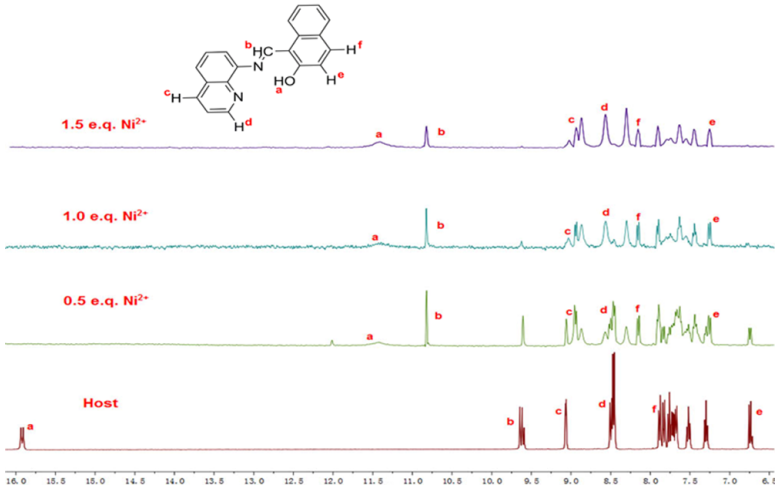

Figure S5. Partial ^{1}H NMR spectra of **LX** upon addition of Ni^{2+} in DMSO-*d*6

ESI-MS spectra of LX

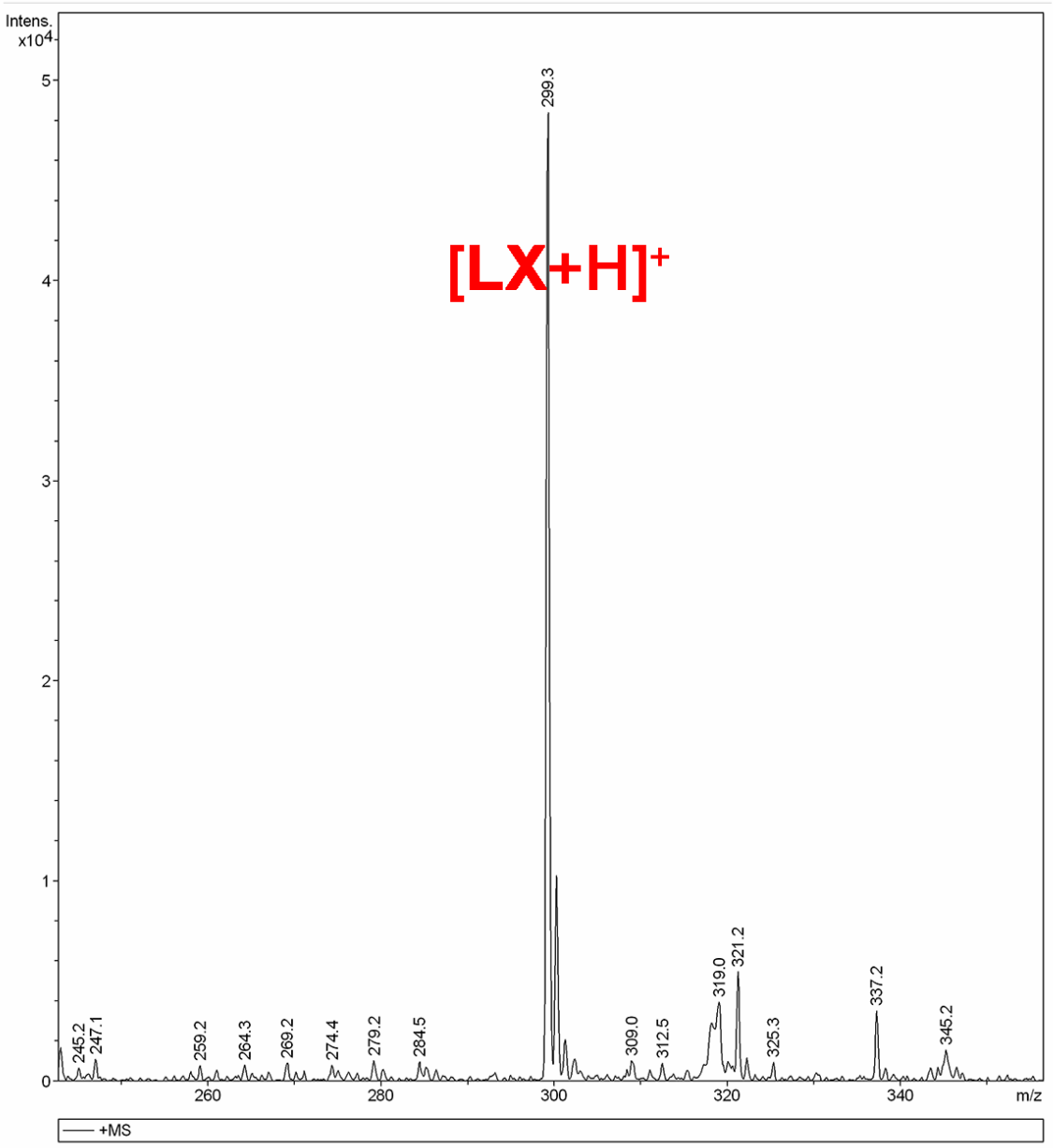

Figure S6. ESI-MS spectra of **LX**.

ESI-MS spectra of LX-Ni^{2+}

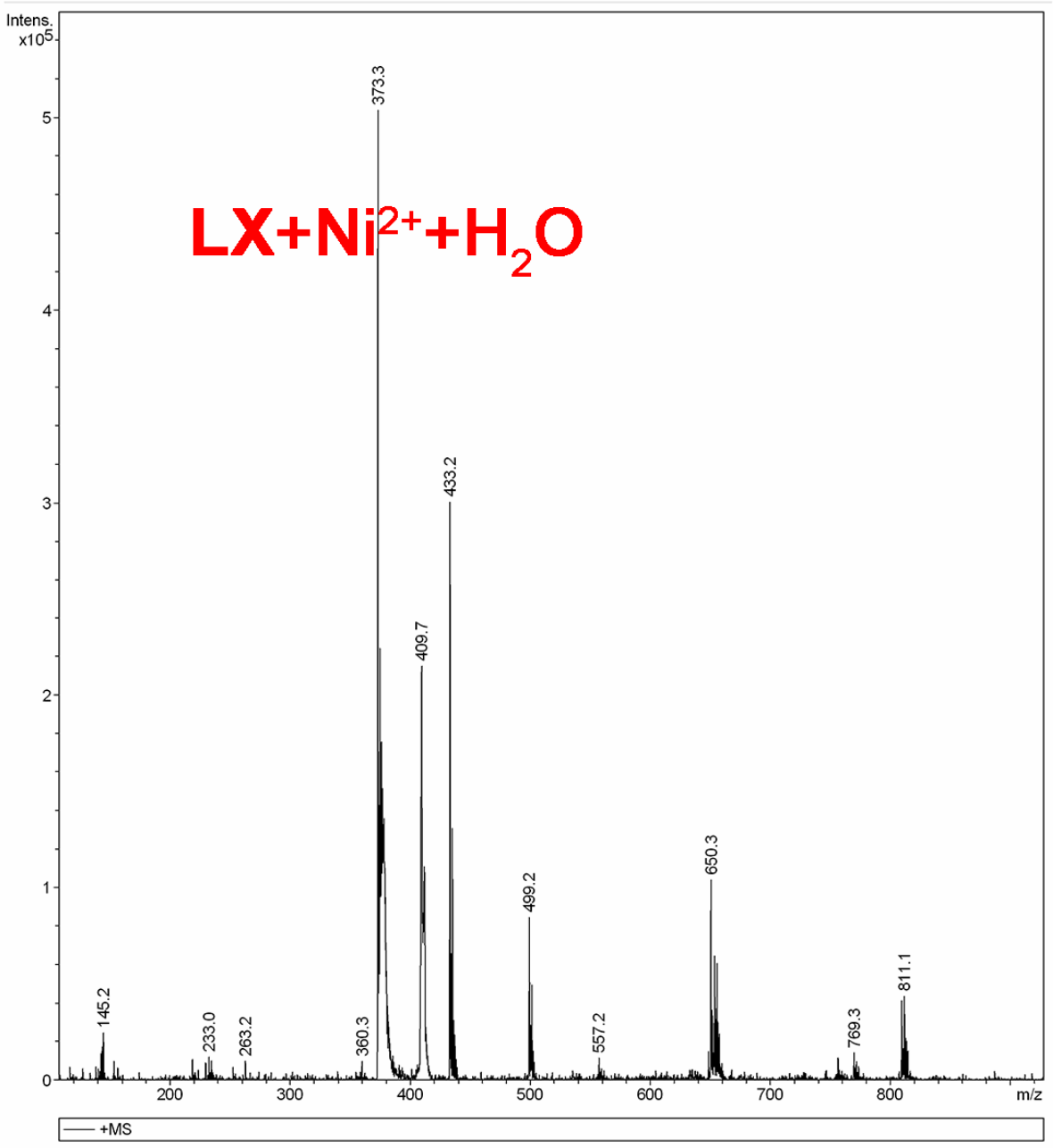

Figure S7. ESI-MS spectra of **LX-Ni^{2+}**.