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Supporting Information

A new coumarin-based chromogenic chemosensor for the detection of dual analytes Al^{3+} and F^-

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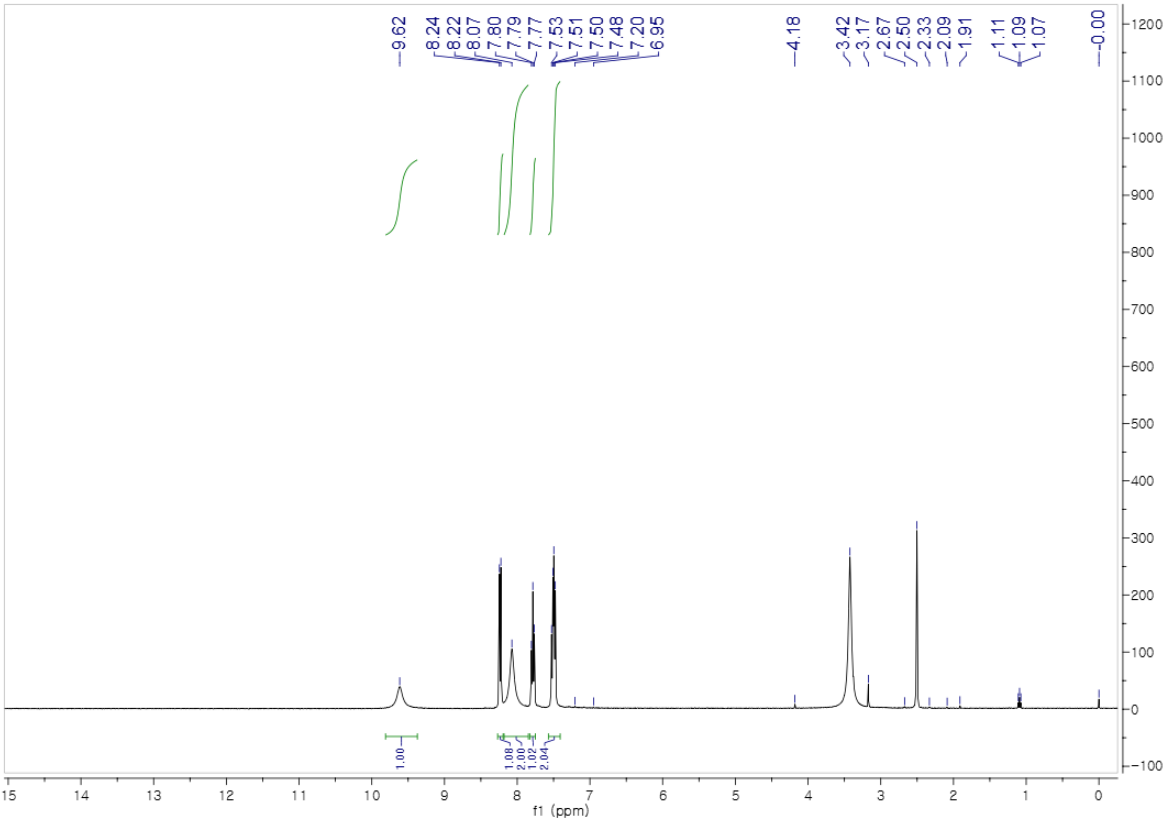

Figure S1. ^{1}H NMR spectrum of receptor **1**.

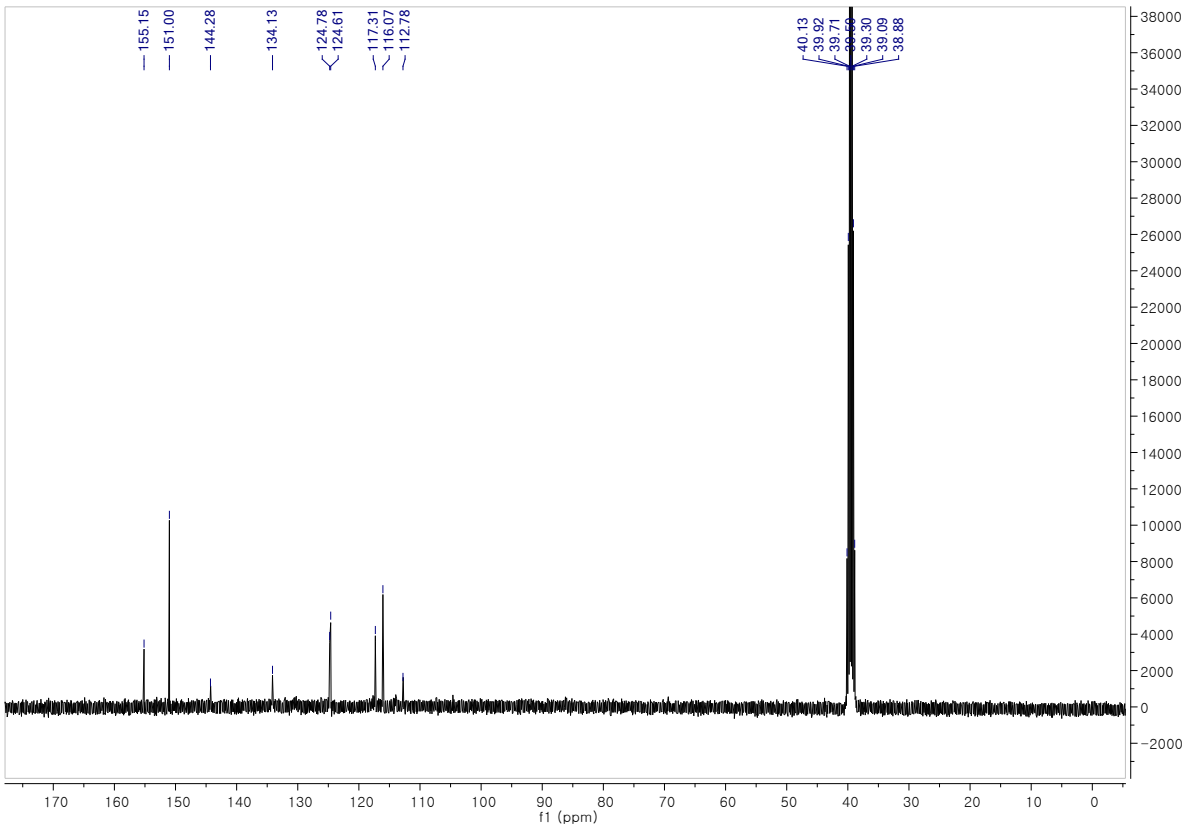

Figure S2. ^{13}C NMR spectrum of receptor **1**.

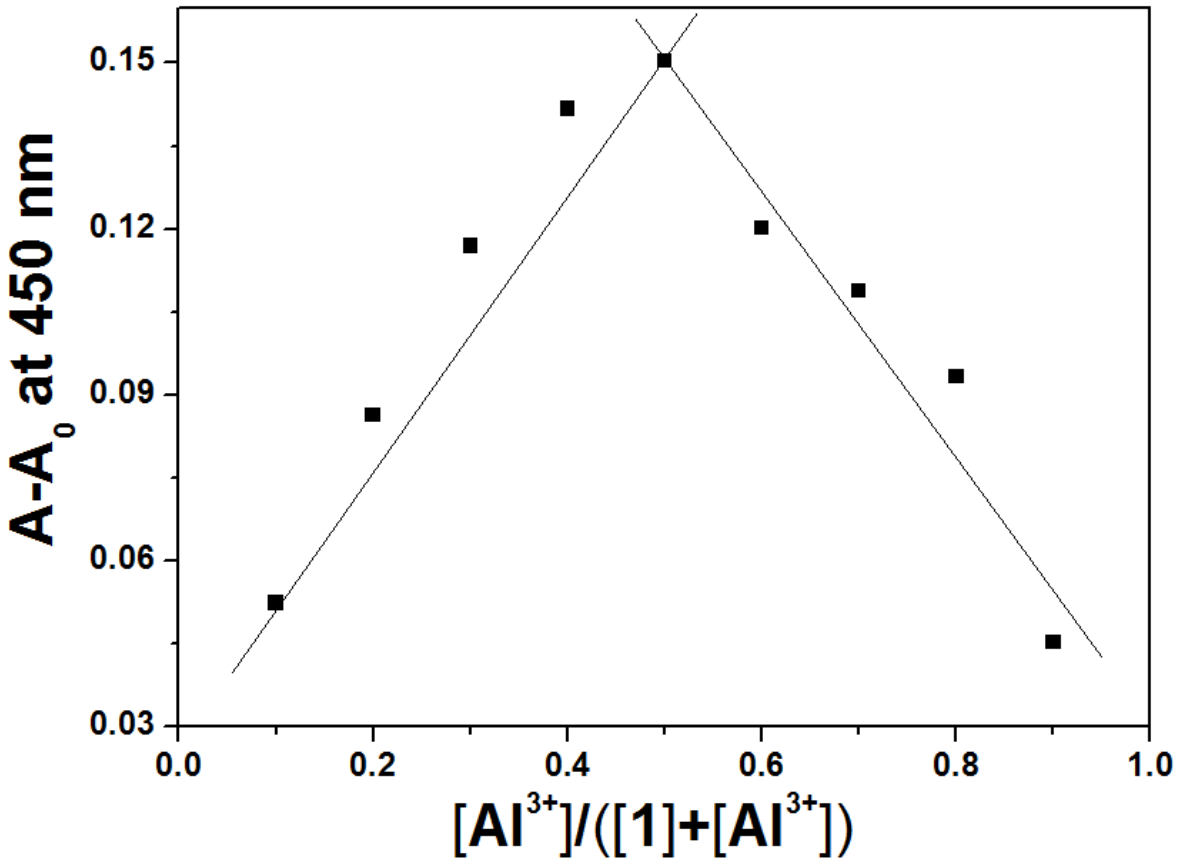

Figure S3. Job plot for the binding of **1** with Al^{3+}. The change of absorbance at 450 nm was plotted as a function of the molar ratio $[Al^{3+}]/([\mathbf{1}] + [Al^{3+}])$. The total concentration of aluminum ions with receptor **1** was 3.0 x 10^{-5}M

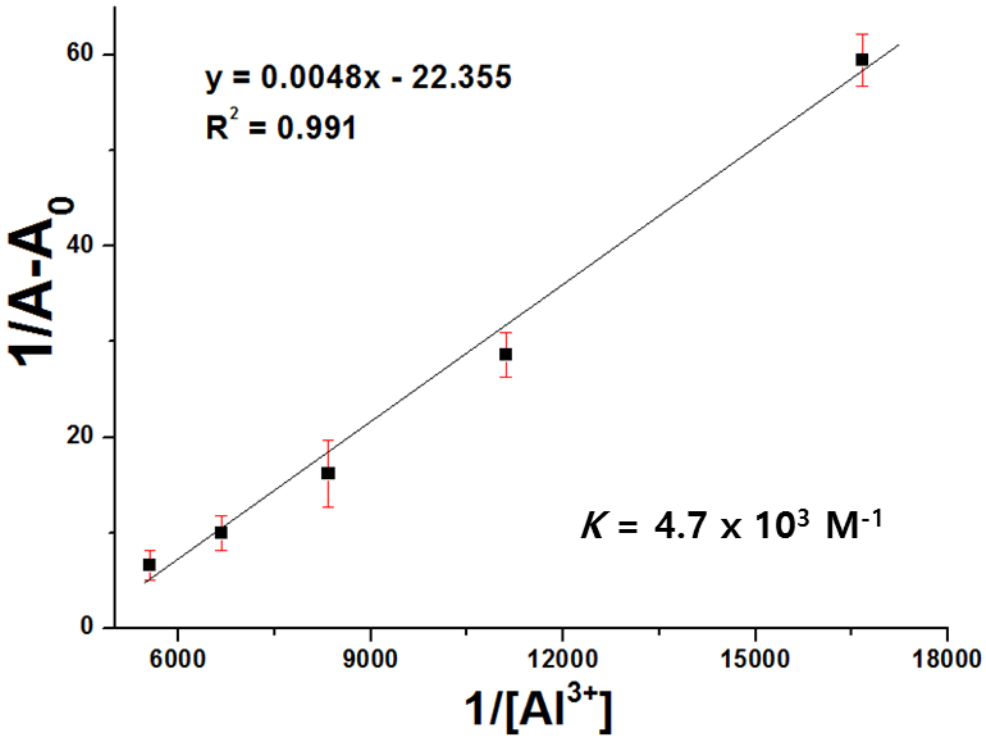

Figure S4. Benesi-Hildebrand equation plot (absorbance at 450 nm) of **1** (30 μM), assuming 1:1 stoichiometry for association between **1** and Al^{3+}.

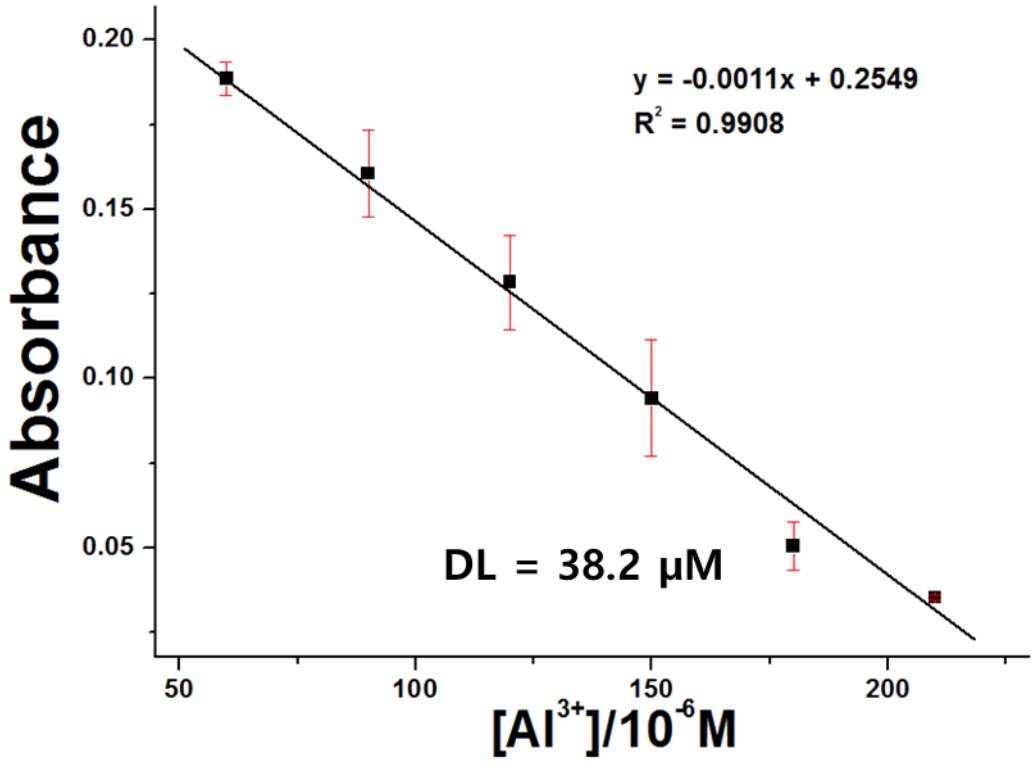

Figure S5. Determination of the detection limit based on change in the ratio (absorbance at 450 nm) of **1** (30 μM) with Al^{3+}.

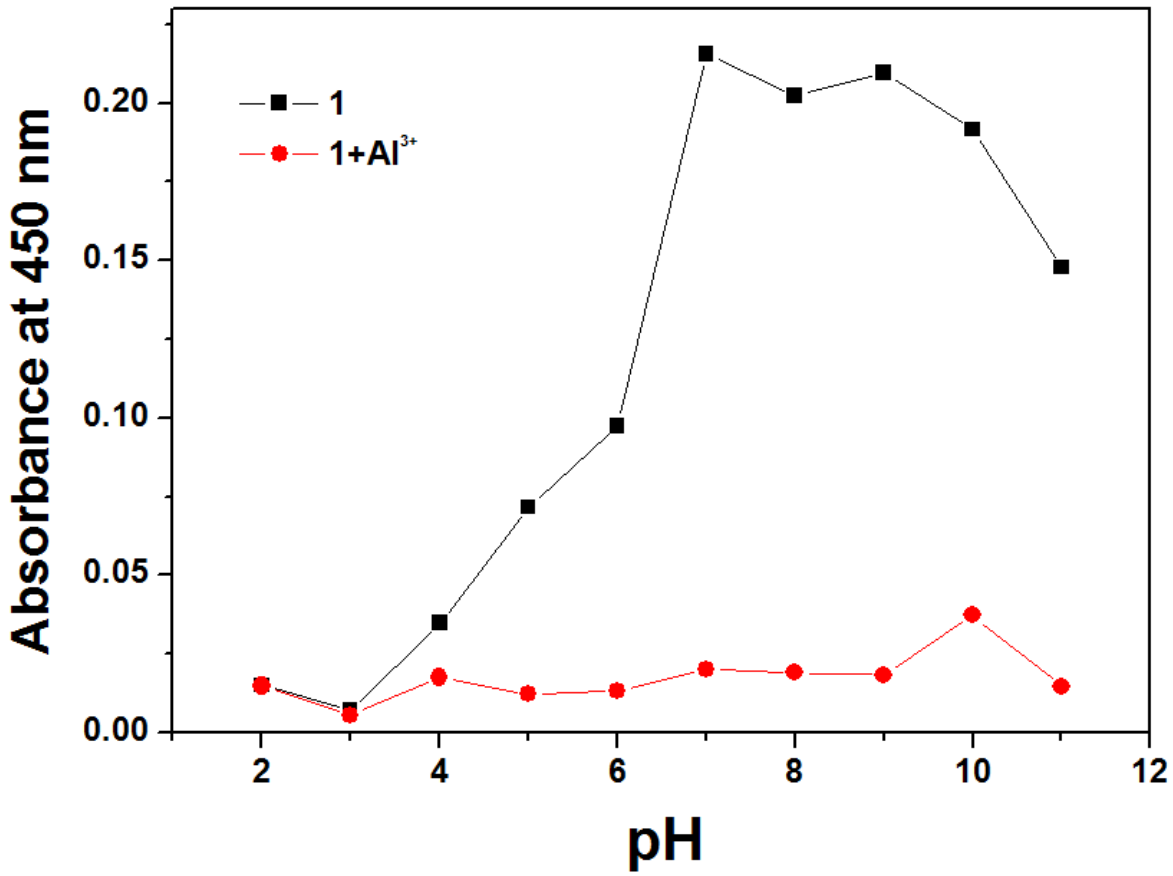

Figure S6. Absorbance (at 450 nm) of **1**-Al^{3+} complex at different pH values (2-11).

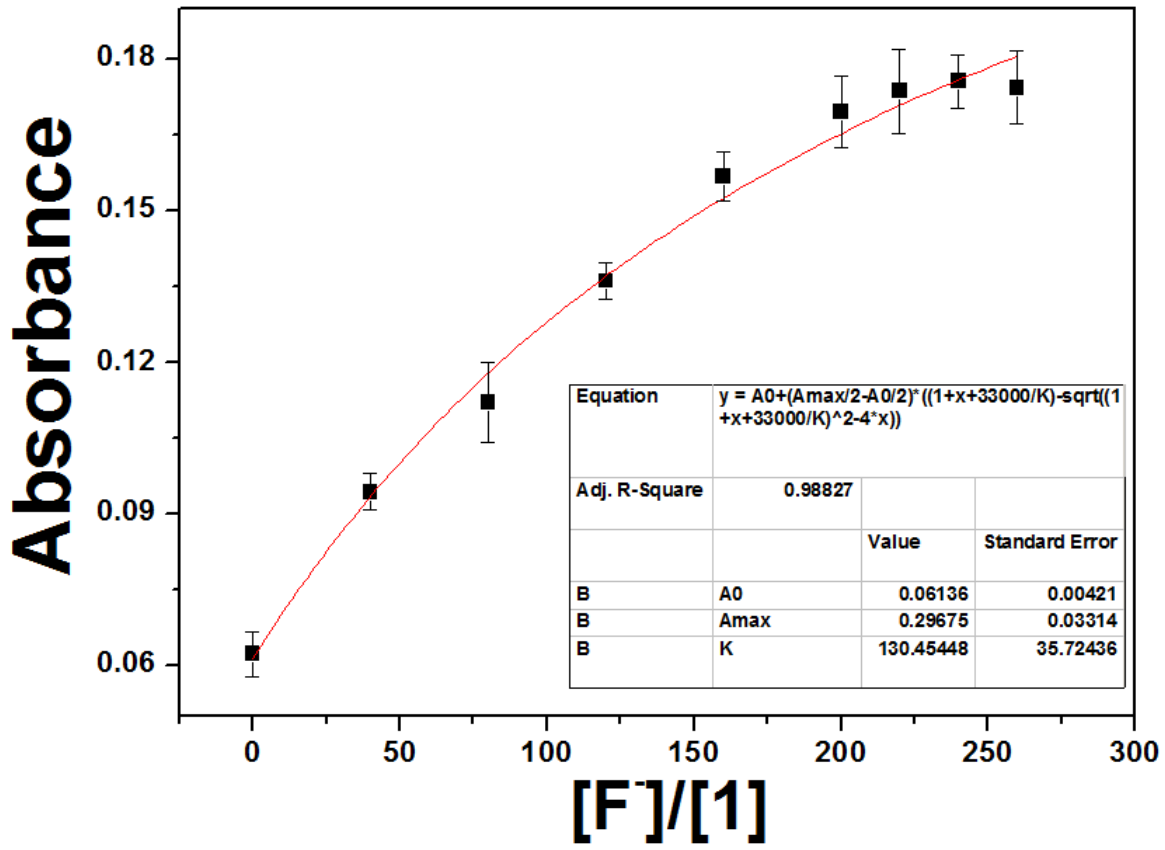

Figure S7. Determination of the association constant based on change in the ratio (absorbance at 520 nm) of **1** (30 μM) with F^-. The red line is the nonlinear fitting curve obtained assuming a 1:1 association between **1** and F^-.

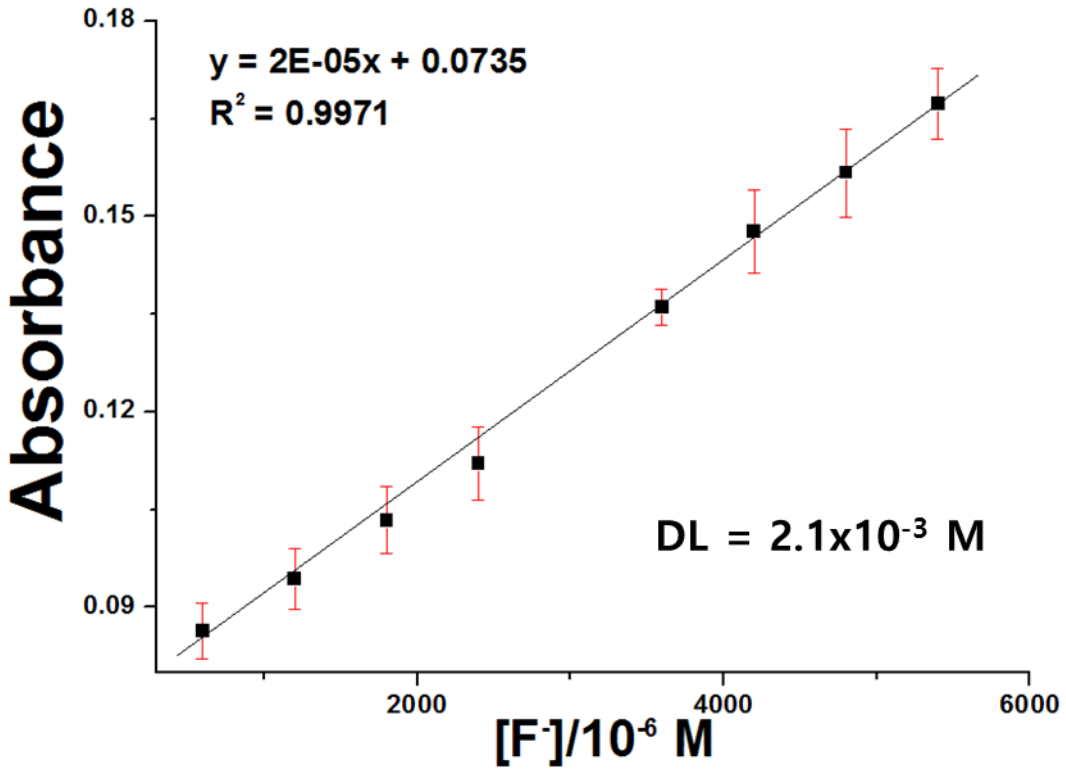

Figure S8. Determination of the detection limit based on change in the ratio (absorbance at 550 nm) of **1** (30 μM) with F^-.

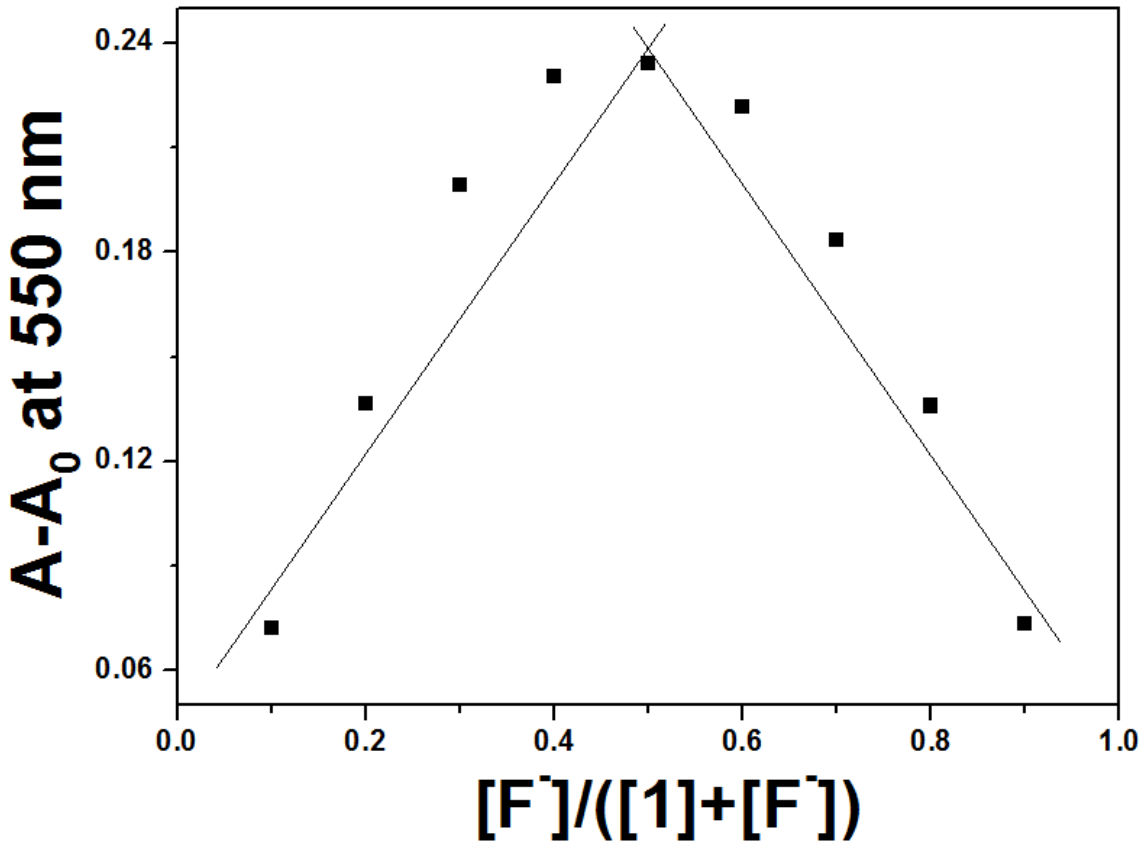

Figure S9. Job plot for the binding of **1** with F^-. The change of absorbance at 550 nm was plotted as a function of the molar ratio $[F^-]/([\mathbf{1}] + [F^-])$. The total concentration of fluoride with receptor **1** was 3.0×10^{-5} M.

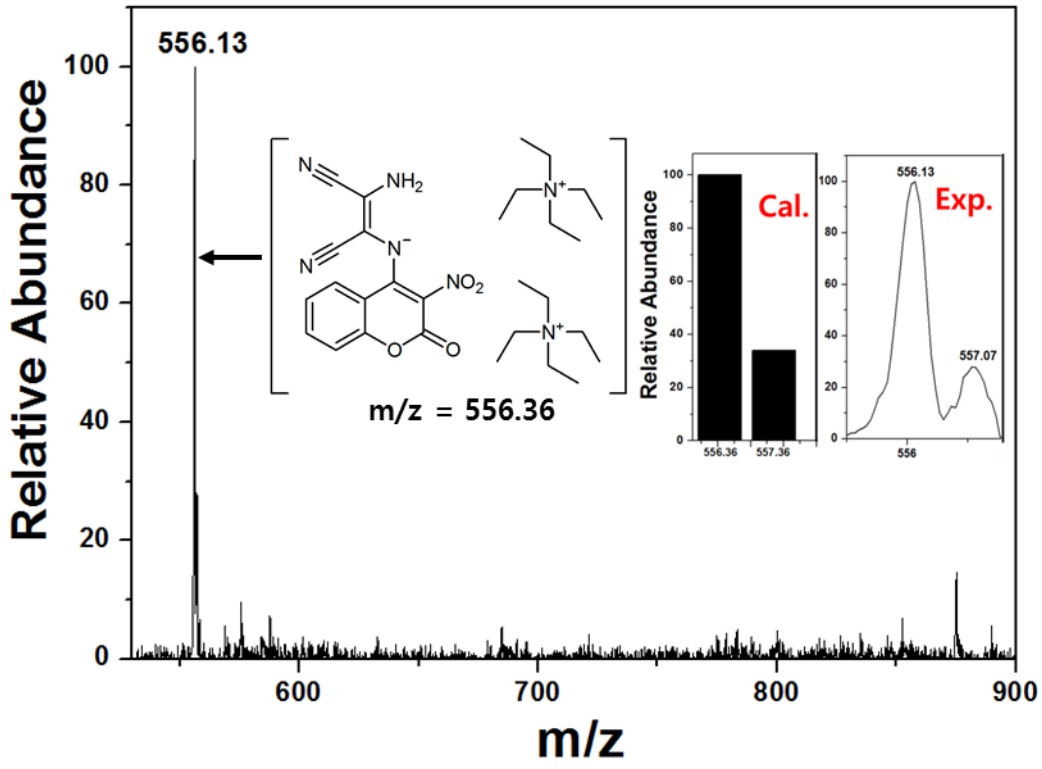

Figure S10. Positive-ion electrospray ionization mass spectrum of **1** (0.1 mM) upon addition of F^- (1 equiv).