Supporting Information

A selective colorimetric chemosensor with an electron-withdrawing group for muti-analytes CN⁻ and F⁻

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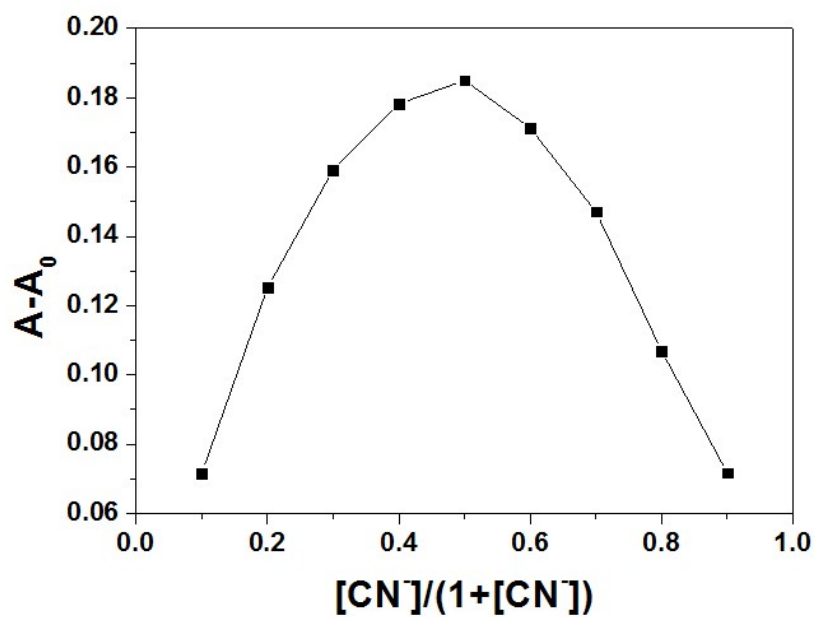*Fax: +82-2-973-9149; Tel: +82-2-970-6693; E-mail: meureen@hanmail.net and chealkim@seoultech.ac.kr*

Fig. S1 Job plot of receptor **1** and CN$^-$ in a mixture of DMSO/bis-tris buffer (1:5, v/v). Absorbance at 469 nm was plotted as a function of the molar ratio [CN$^-$]/([**1**] + [CN$^-$]). The total concentrations of cyanide with receptor **1** were 3.0 x 10^{-5} M.
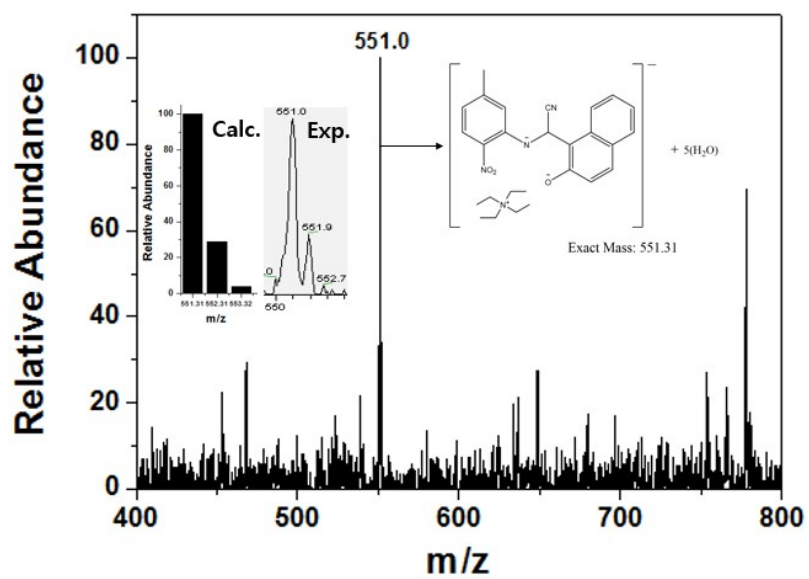
Fig. S2 Negative-ion electrospray ionization mass spectrum of **1** (0.1 mM) upon addition of CN⁻ (1 equiv).
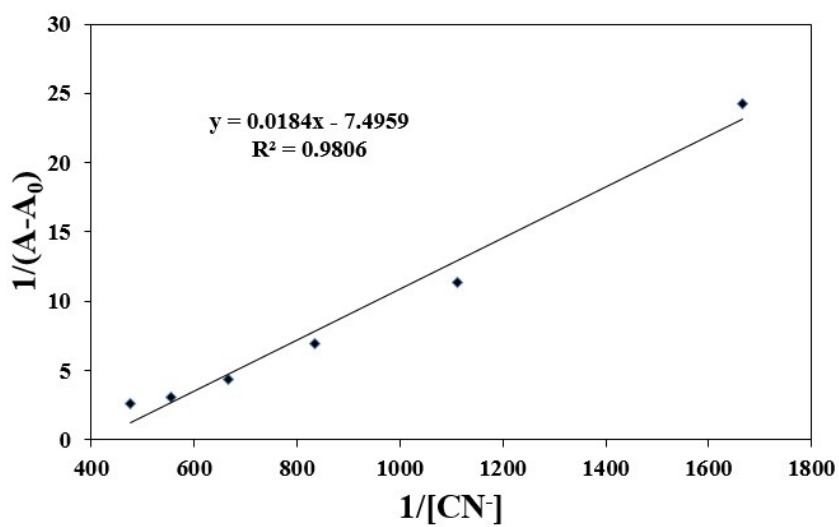
Fig. S3 Benesi-Hildebrand plot (at 469 nm) of **1**, assuming a 1:1 stoichiometry for association between **1** and CN^-.
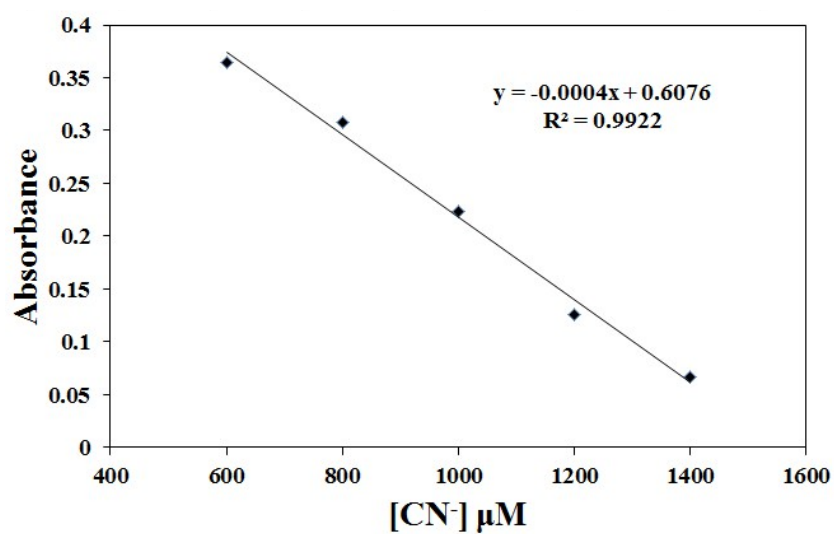
$$y = -0.0004x + 0.6076$$
$$R^2 = 0.9922$$

Fig. S4 Determination of the detection limit based on absorbance change (469 nm) of **1** (30 μM) with CN⁻.
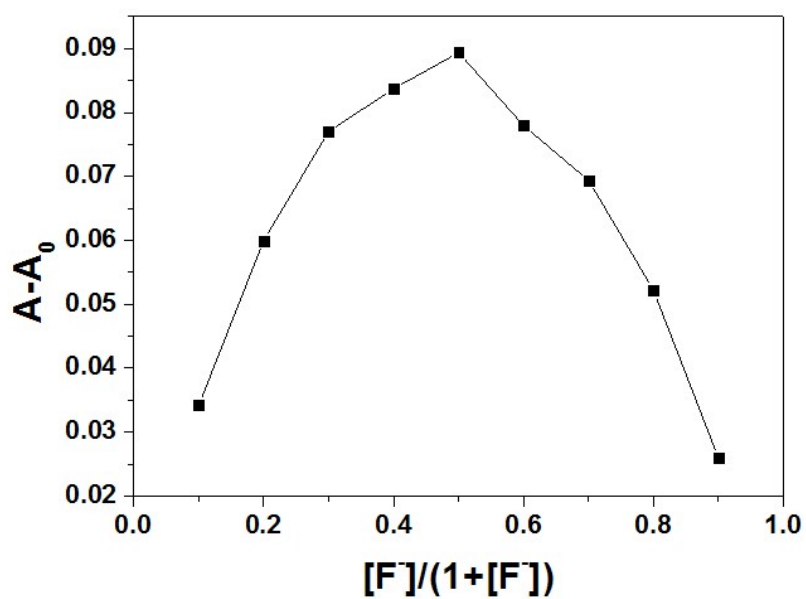
Fig. S5 Job plot of receptor **1** and F^- in CH_3CN. Absorbance at 458 nm was plotted as a function of the molar ratio $[F^-]/([1] + [F^-])$. The total concentrations of fluoride with receptor **1** were 2.0 x 10^{-5} M.
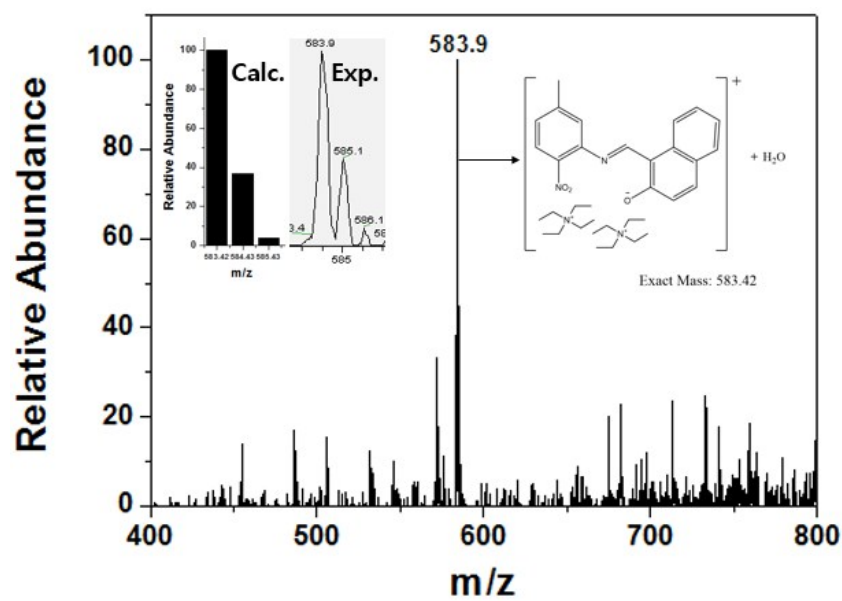
Fig. S6 Positive-ion electrospray ionization mass spectrum of **1** (0.1 mM) upon addition of F⁻ (1 equiv).
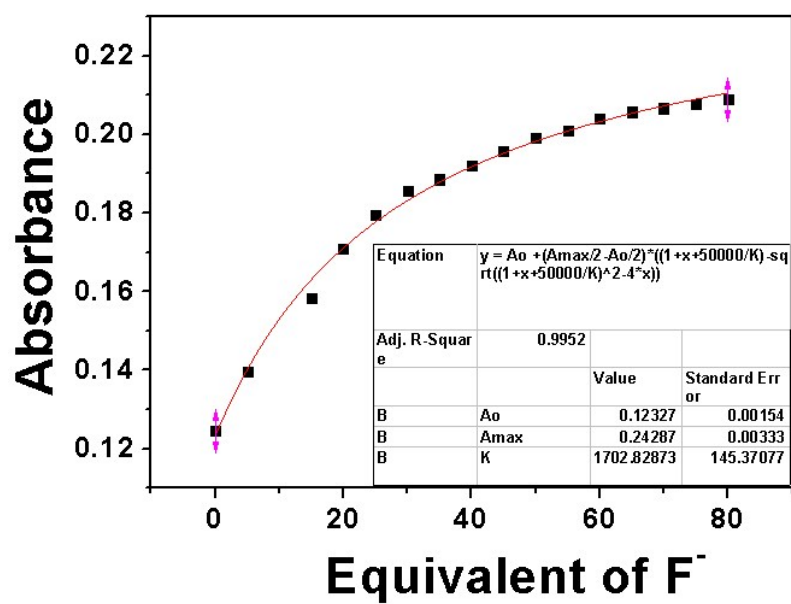
Fig. S7 Determination of the apparent association constant based on change in the ratio (absorbance at 458 nm) of **1** (20 μM) with F$^-$. The red line is the nonlinear fitting curve obtained with assuming a 1:1 association between **1** and F$^-$.
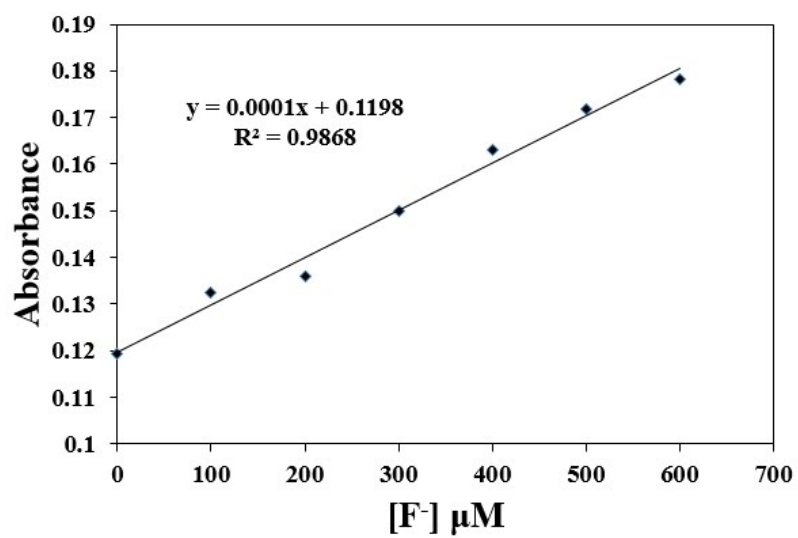
y = 0.0001x + 0.1198
R² = 0.9868

Fig. S8 Determination of the detection limit based on absorbance change (458 nm) of **1** (20 μM) with F⁻.