Supporting Information

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

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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 $[\text{CN}^-] / ([1] + [\text{CN}^-])$. The total concentrations of cyanide with receptor 1 were $3.0 \times 10^{-5}$ 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⁻.
Fig. S4 Determination of the detection limit based on absorbance change (469 nm) of I (30 μM) with CN⁻.
Fig. S5 Job plot of receptor 1 and F\textsuperscript{-} in CH\textsubscript{3}CN. Absorbance at 458 nm was plotted as a function of the molar ratio [F\textsuperscript{-}]/([1] + [F\textsuperscript{-}]). The total concentrations of fluoride with receptor 1 were 2.0 x 10\textsuperscript{-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⁻.
Fig. S8 Determination of the detection limit based on absorbance change (458 nm) of 1 (20 μM) with F⁻.