Nanoaggregates of Benzothiazole-Based Amidine-Coupled Chemosensors: A Chemosensor for Ag\textsuperscript{+} and the Resultant Complex as a Secondary Sensor for Cl\textsuperscript{−}

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**A**

![Graph A](image1)

**B**

![Graph B](image2)
Figure S1. The absorption spectra of sensors (A) 1 and N1, (B) 2 and N2, and (C) 3 and N3. The absorption spectra of compounds 1-3 were recorded in pure methanol while the absorption spectra of sensors N1-N3 were taken in aqueous medium with a concentration of 20 µM.

Figure S2. Distribution of particle size of (A) N1, (B) N2 and (C) N3 measured with a DLS-based particle size analyzer.
Figure S3. Changes in UV-vis absorption spectra of sensors (A) N2 and (B) N3 (20 μM) varying the pH in aqueous medium.

Figure S4. Distribution of particle size of sensor N2 upon addition of Ag⁺. The measurements were done with a DLS-based particle size analyzer.

Figure S5. Fluorescence responses of sensors (A) N2 and (B) N3 in water with a concentration of 20 μM.
Figure S6. Calculation of the binding constants of sensors (A) N2 and (B) N3 with Ag⁺.

![Graph A](image1)

![Graph B](image2)

\[ R^2 = 0.9516 \]

Figure S7. Distribution of particle size of sensor N2.Ag⁺ upon addition of Cl⁻. The measurements were done with a DLS-based particle size analyzer.

![Histogram](image3)
**Figure S8.** Calculation of the binding constant of complex $\text{N}_2\text{Ag}^+$ with $\text{Cl}^-$.

**Figure S9.** Bar diagram showing the absorbance of complex $\text{N}_2\text{Ag}^+$ (20 $\mu$M) binding to $\text{Cl}^-$ (200 $\mu$M) in the presence of other halides (200 $\mu$M) in HEPES aqueous solution (20 mM, pH = 7.0) at 355 nm.
Figure S10. $^1$H NMR of compound 2.
**Figure S11.** $^{13}$C NMR of compound 2.
Figure S12. Mass spectrum of complex N2.Ag⁺.
Figure S13. $^1$H NMR of compound 3.
Figure S14. $^{13}$C NMR of compound 3.