Supporting Information for

Specific recognition of DNA bulge sites by in-situ grown fluorescent Ag nanoclusters with high selectivity

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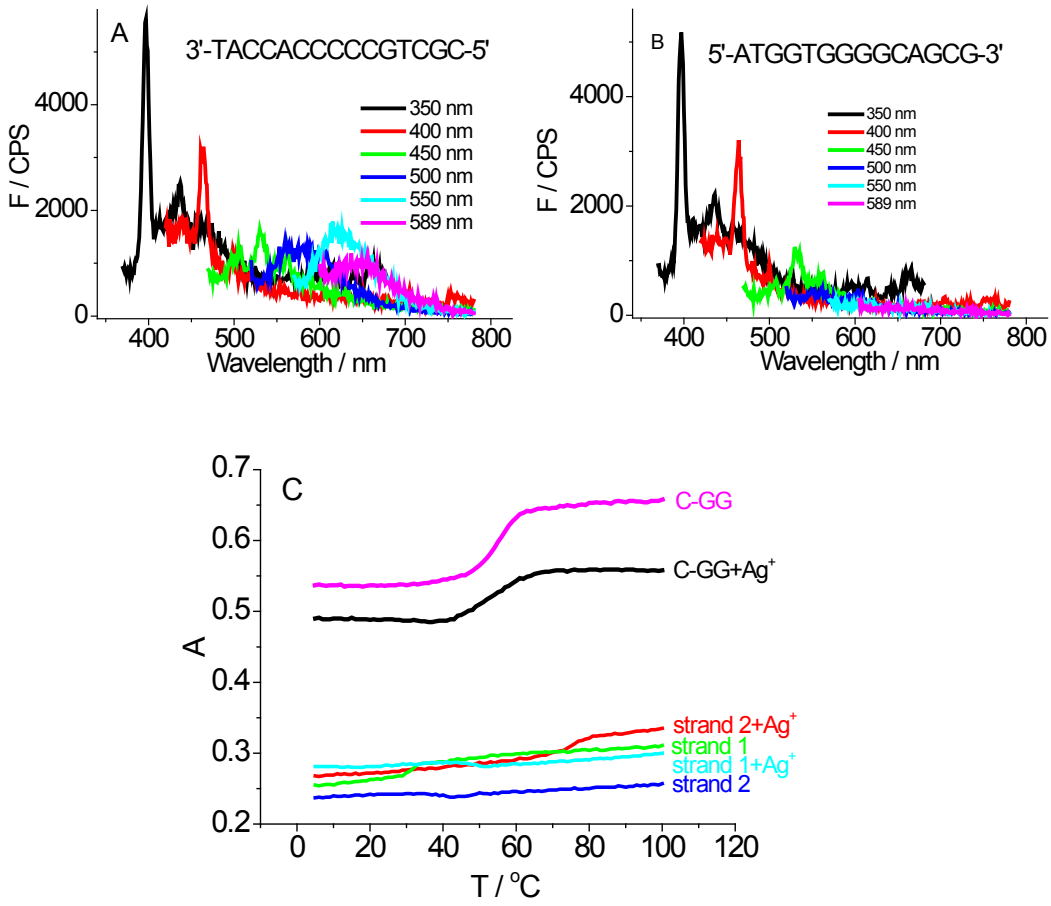


Fig. S1 (A and B) Dependences of emission spectra of Ag NCs templated by ss-DNAs of 3′-TACCACCCCCGTCGC-5′ (strand 1) and 5′-ATGGTGGGGC AGCG-3′ (strand 2) on the excitation wavelengths. The strand 1 and 2 hybridize to form C-GG. DNA: 1 μM; Ag^+: 15 μM; $NaBH_4$: 6 μM. (C) Melting curves of strand 1 and 2 in the absence and presence of Ag^+. The melting of C-GG at the same condition was shown as a control (T_m=53.1 °C, very similar as that in the absence of Ag^+ (T_m=54.2 °C).

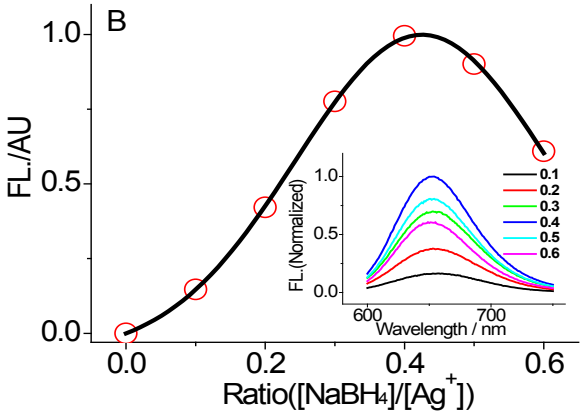


Fig. S2 Fluorescence intensities at 652 nm under different molar ratios of $NaBH_4$ to Ag^+ (Ag^+ at 15 μM) with C-GG (1 μM) as template for production of fluorescent Ag NCs. Inset: the corresponding emission spectra.

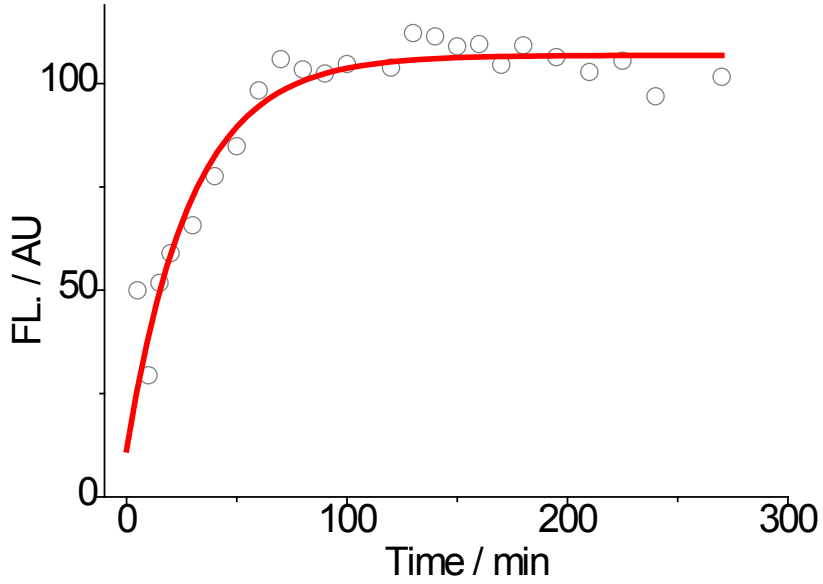


Fig. S3 Time evolution of fluorescence intensities at 652 nm (λ_{ex}=589 nm) for C-GG templated Ag NCs. [C-GG] = 1 μM, [Ag^+] = 15 μM, and [$NaBH_4$] = 6 μM. Time was recorded immediately after addition of $NaBH_4$.

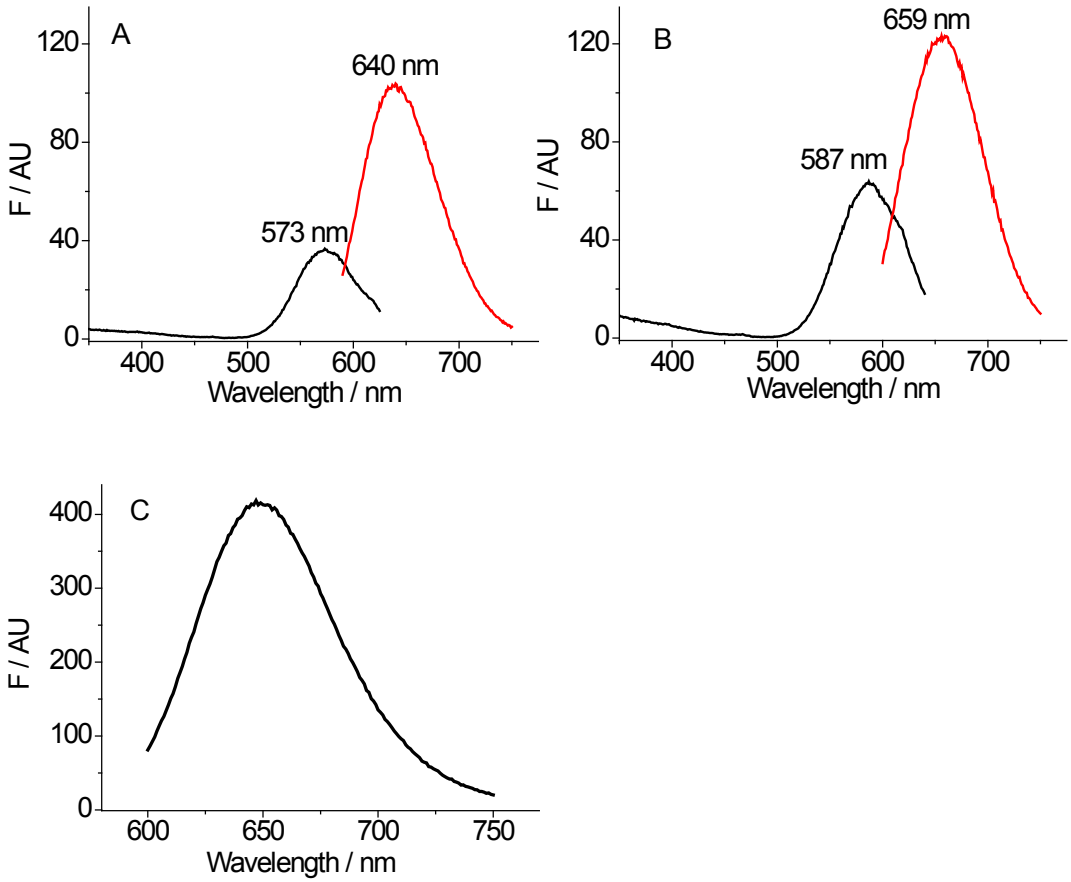
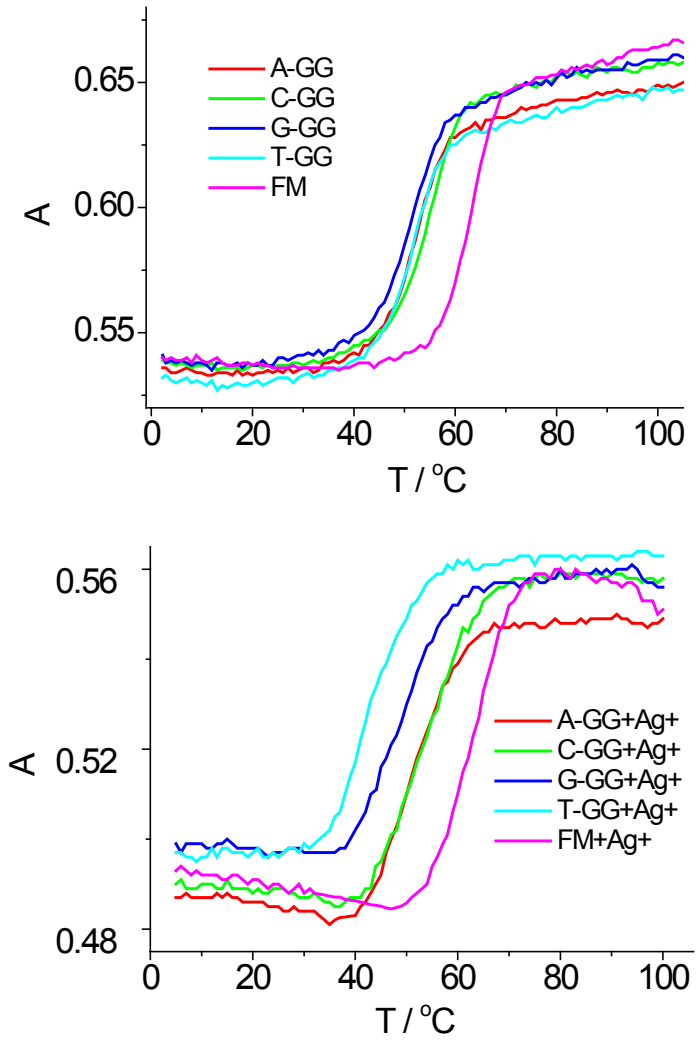


Fig. S4 (A and B) Excitation and emission spectra of Ag NCs templated by 5'-CCCTTAATCCCC-3'. (C) Emission spectrum of Ag NCs templated by C-GG (λ_{ex}=589 nm) as a control. Note that the fluorescence intensity is much higher than that obtained with 5'-CCCTTAATCCCC-3'. For further Cl^- experiment, in order to get a reliable comparison especially at the condition that the excitation wavelengths are not different so much between these DNAs, we found that [DNA] = 5 μM and [Ag^+] = 20 μM were suitable to match this requirement. The fluorescence experiments carried out at these concentration conditions. The fact that the obtained spectra with the ss-DNA were different from the previously reported ones (C. I. Richards, S. Choi, J. C. Hsiang, Y. Antoku, T. Vosch, A. Bongiorno, Y. L. Tzeng and R. M. Dickson, *J. Am. Chem. Soc.,* 2008, **130,** 5038) was caused by the used different solution conditions, since we have found that the solution condition has a profound effect on the fluorescence properties of Ag NCs (K. Ma, Q. H. Cui, Y. Shao, F. Wu, S. J. Xu and G. Y. Liu, *J. Nanosci. Nanotechnol.*, 2012, **12**, 861).



DNA	Without Ag^+	With Ag^+
A-GG	51.7	50.7
C-GG	54.2	53.1
G-GG	51.0	48.7
T-GG	51.2	42.4
FM	62.3	60.6

Fig. S5 Typical melting curves of DNAs in the absence and presence of Ag^+. The corresponding T_m values are listed in the Table.