

Supporting Information

Stem-directed growth of highly fluorescent silver nanoclusters for the versatile logic devices

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Table. S1. All of the oligonucleotides used in this work.

oligonucleotides	Sequence 5'-3'
G	GGGTGGGTGGGTGGGT
C	ACCCACCCACCC
C'	CCCTTAACTCCC
T ₅ -HP GC	ACCCACCCACCCCTTTTTGGGTGGGTGGGTGGG
T ₅ -HP GC'	CCCTTAACTCCC TTTTTGGGTGGGTGGGTGGG
T ₅ -HP	TATCCGTTTTTTTACGGATA
T ₅ -HP'	ACCCACCCACCCCTATCCGTTTTTTTACGGATAGGGTGGGTGGGTGGG
T ₄ -HP GC	ACCCACCCACCCCTTTTGGGTGGGTGGGTGGG
T ₆ -HP GC	ACCCACCCACCCCTTTTTTGGGTGGGTGGGTGGG
T ₈ -HP GC	ACCCACCCACCCCTTTTTTTTGGGTGGGTGGGTGGG
T ₁₀ -HP GC	ACCCACCCACCCCTTTTTTTTTTGGGTGGGTGGGTGGG
T ₅ -HP GC ₁	ACCCTTTTTTAGGGT
T ₅ -HP GC ₂	ACCCACCCCTTTTTGGGTGGGT
T ₅ -HP GC ₃	ACCCACCCACCCCTTTTTGGGTGGGTGGGT
T ₅ -HP GC ₄	ACCCACCCACCCACCCCTTTTTGGGTGGGTGGGTGGGT

Table S2. Lifetimes of DNA capped AgNCs.

Sample	$\lambda_{em}(nm)$	τ_1 (ns)	A_1 (%)	$\tau_2(ns)$	A_2 (%)	$\tau_{ave}^{[a]}$ (ns)	χ^2
T ₅ -HP GC	580	1.74	4.62	4.78	95.38	4.64	1.046
ds GC	580	1.20	22.48	4.61	77.52	3.85	1.106

[a] The average lifetime was calculated according to $\tau_{ave} = \sum A_i \tau_i$.

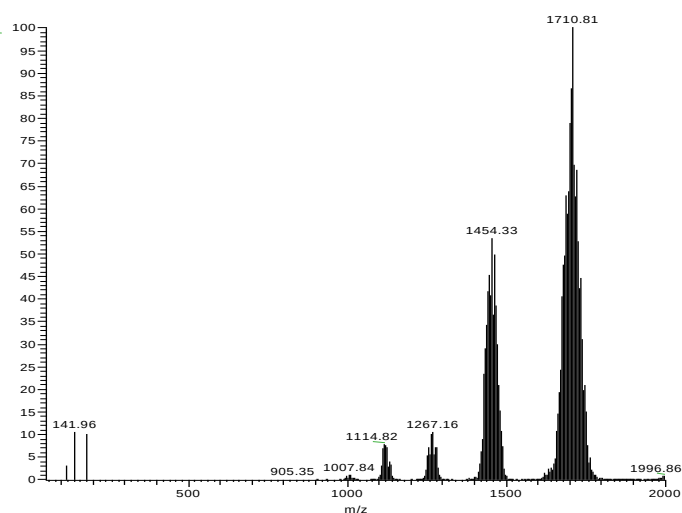


Fig.S1. EIS-Mass spectrum of T₅-HP GC AgNCs solution.

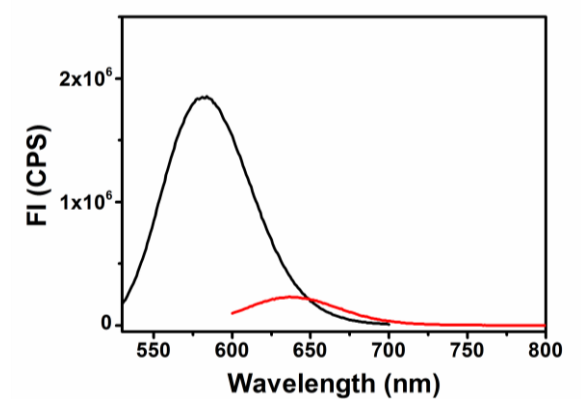


Fig. S2. Fluorescence behaviors of 1 μ M T₅-HP GC capped AgNCs using different excited wavelength (Red line excited with 580 nm and black line excited with 512 nm).

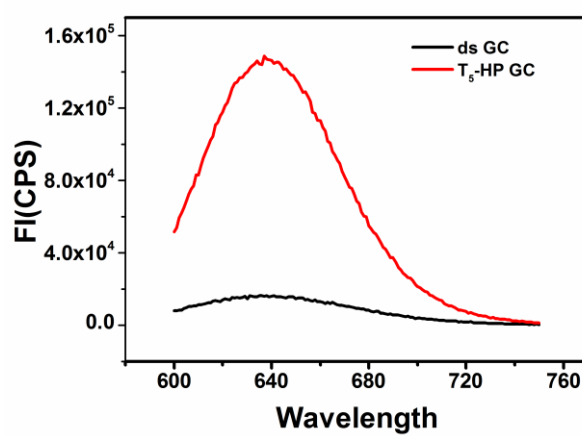


Fig. S3: Enhanced fluorescence behaviors of DNA capped AgNC with the excited wavelength of 580 nm.

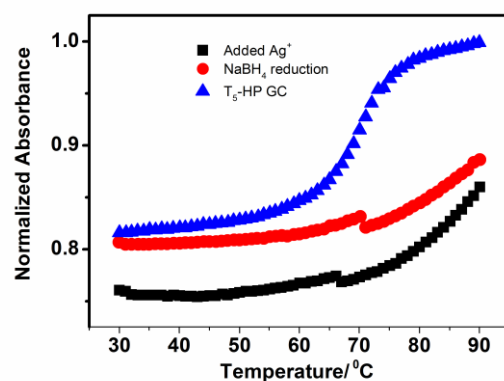


Fig. S4. T_m change recorded upon addition of Ag^+ and $NaBH_4$ using T_5 -HP GC.

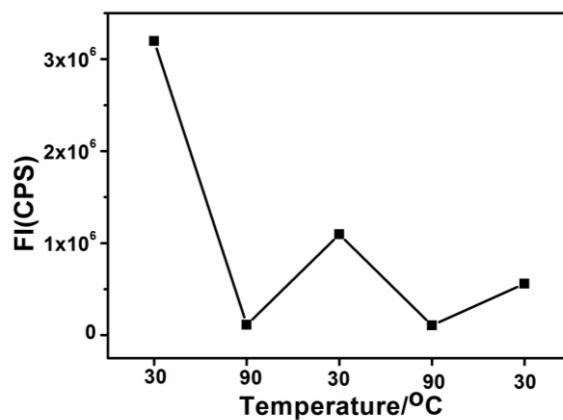


Fig. S5. Measurement taken with temperature shift using 1 μM T_5 -HP GC.

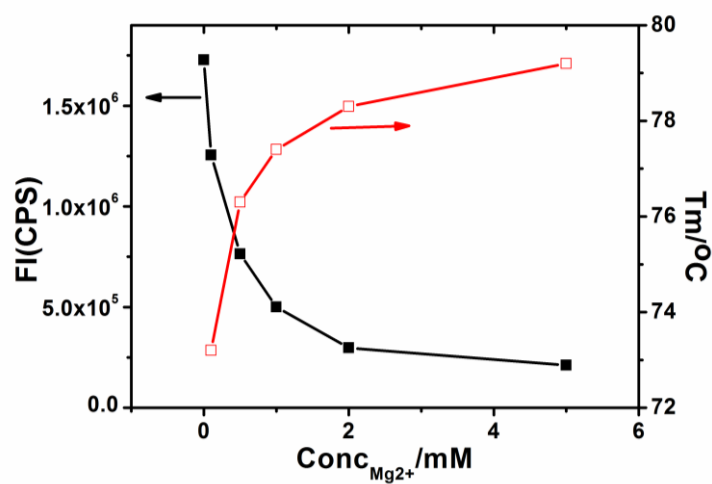


Fig. S6. The effect of Mg^{2+} on the fluorescence of T_5 -HP GC capped AgNCs, T_m was calculated via <http://www.idtdna.com/analyzer/Applications/OligoAnalyzer>.

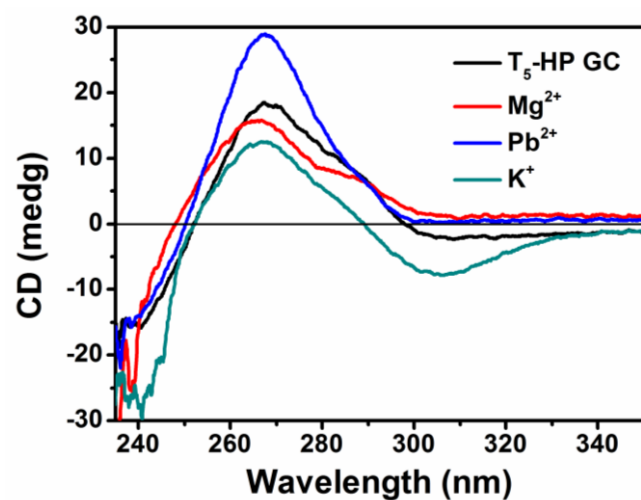


Fig. S7. CD spectra of T₅-HP GC upon addition of different ions.