

Supporting Information

Label-free miRNA fluorescent biosensor based on duplex-specific nucleases and silver nanoclusters

Yuxin Zheng,^{1,2} Qian Wang,¹ Zhiying Jin,² Tingting Zhang,¹ Jianshe Huang,^{*,2}

Jianshan Ye,^{*,3} Xiurong Yang^{*,1,2}

¹ School of Applied Chemistry and Engineering, University of Science and Technology of China, Hefei 230026, China

² State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Science, Changchun 130022, China

³ School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510641, China

* Fax: +86 431 85689278. E-mail: xryang@ciac.ac.cn, jsye@scut.edu.cn, huangjs@ciac.ac.cn

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Table S1. Sequences of nucleic acid molecules used in this study.

Name	Sequence (5'-3')
miR-155	UUAAUGCUAAUCGUGAUAGGGGU
cDNA	ACCCCTATCACGATTAGCATTAA
hp-13bp	CGATTAGCATTAAACCCCCTTAATGCTAATCGTGATA GGGGT
hp-11bp	ATTAGCATTAAACCCCCTTAATGCTAATCGTGATAGG GGT
hp-9bp	TAGCATTAAACCCCCTTAATGCTAATCGTGATAGGG GT
hp-7bp	GCATTAACCCCCTTAATGCTAATCGTGATAGGGGT
smiR-155	UUAAUGCUAAUAGUGAUAGGGGU
tmiR-155	UUAAUACUAAUAGUGAUCGGGGU
miR-21	UAGCUUAUCAGACUGAUGUUGA
miR-499	UUAAGACUUGCAGUGAUGUUU
miR-133a	AGCUGGUAAAAUGGAACCAAU

Table S2. Comparison of the proposed biosensor with the previously reported methods for miRNA detection.

Method	Target	Linear range	LOD	Reference
Fluorescence	miR-21	20-160 nM	2.39 nM	1
Fluorescence	miR-21	2-400 nM	0.57 nM	2
Fluorescence	miR-223	0.05-0.6 μ M	0.018 μ M	3
Fluorescence	miR-362	20-200 nM	6.5 nM	4
Phosphorescence	miR-21	8-80 nM	1.6 nM	5
Colorimetry	miR-141	0-100 nM	0.48 nM	6
Fluorescence	miR-155	1-600 nM	0.86 nM	This work

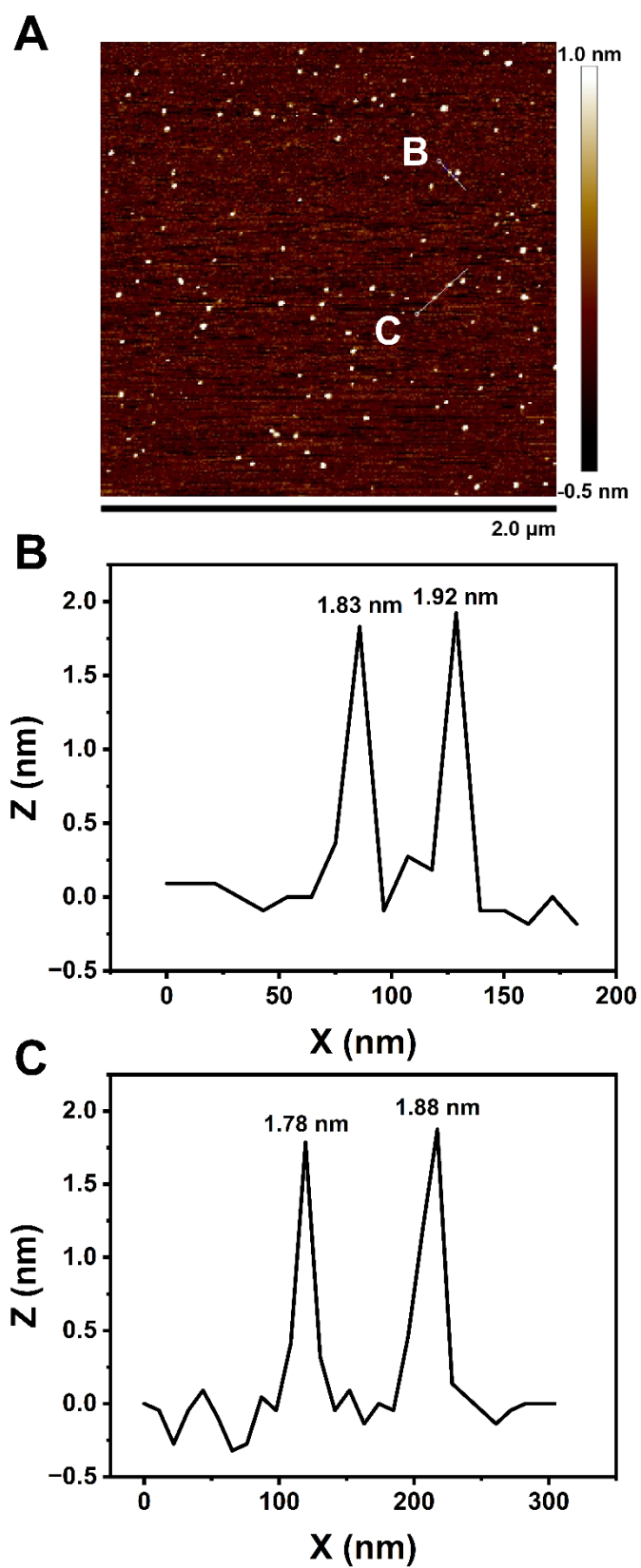


Figure S1. (A) AFM images and (B, C) corresponding height profiles of DNA-AgNCs.

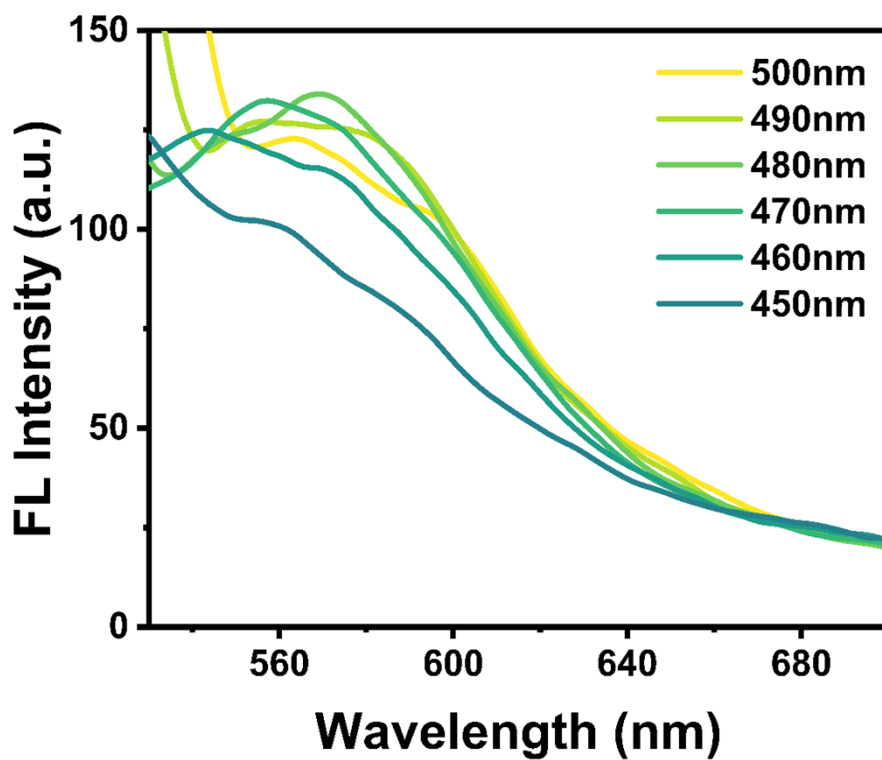


Figure S2. The fluorescence emission spectra of the DNA-AgNCs at various excitation wavelengths.

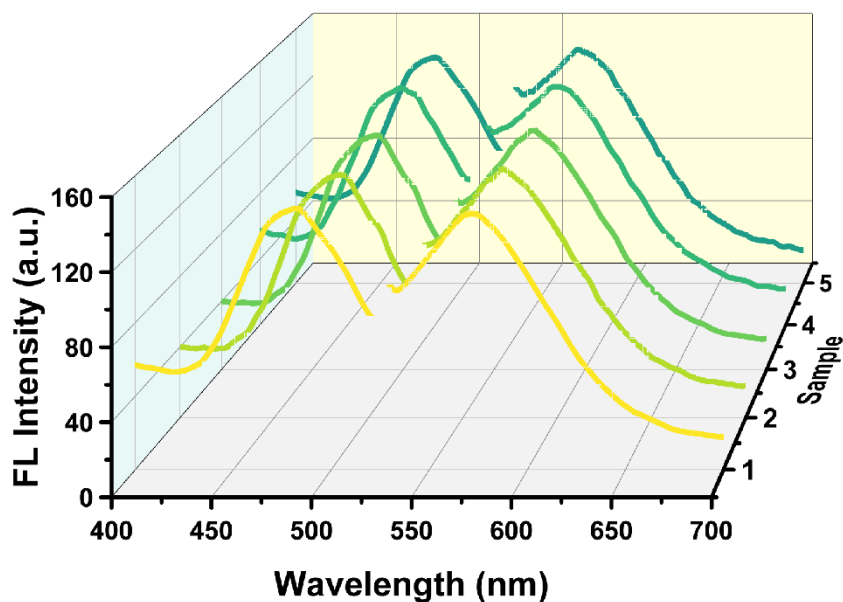


Figure S3. The repeatability of the fluorescence excitation and emission spectra of DNA-AgNCs.

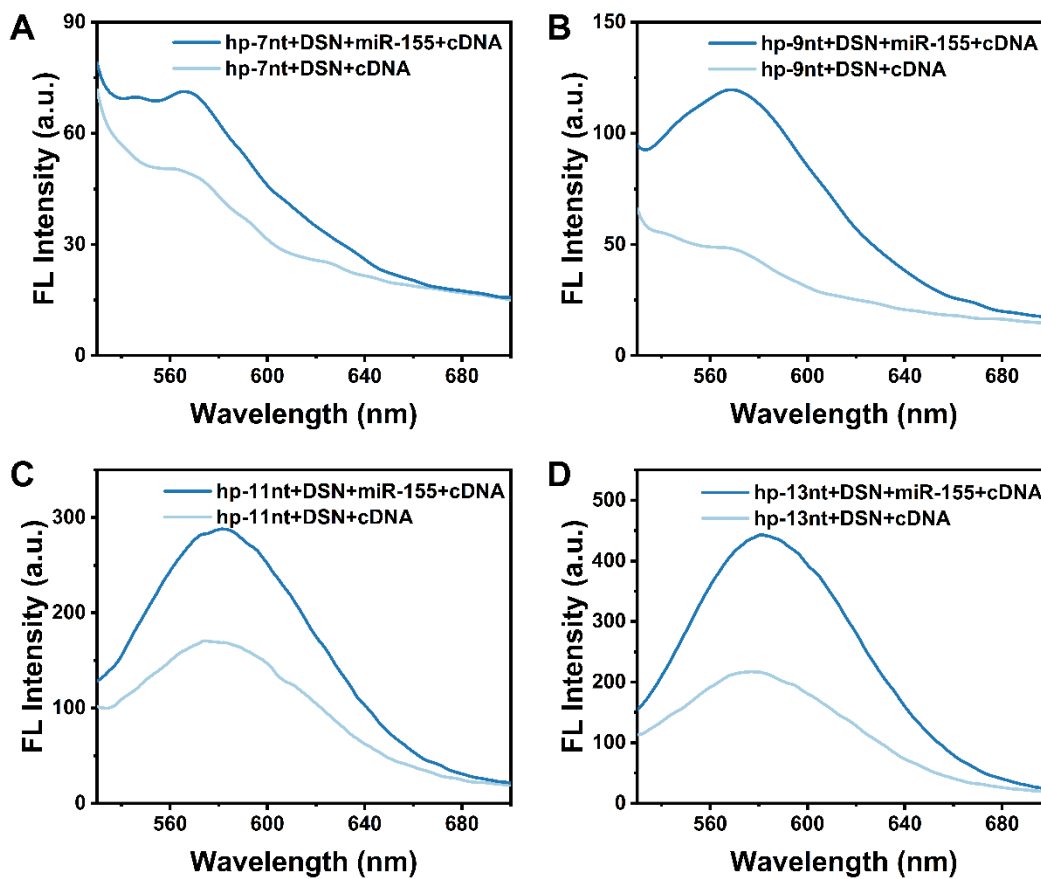


Figure S4. Fluorescence spectra of the reaction systems using hairpin DNA with different paired base numbers in the absence and presence of target miR-155 (500 nM).

References

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