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Enzyme-free and label-free miRNA detection based on target-triggered catalytic hairpin assembly and fluorescence enhancement of DNA-silver nanoclusters

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Highlights

- An enzyme-free, label-free and cost-effective approach is developed to detect miRNA-141.
- We evaluate the concentration of miR-141 based on CHA and fluorescence enhancement of
- DNA-AgNCs nearby G-rich DNA.
- Diagnostic capability was demonstrated by measuring miR-141 in human blood serum.
- This strategy would be expanded to detect other miRNAs.

Abstract

We herein describe a simple, enzyme-free, and label-free strategy for the detection of miRNA based on target-triggered catalytic hairpin assembly (CHA) and fluorescence enhancement of DNA-silver nanoclusters (DNA-AgNCs). This strategy employs two hairpin probes that are rationally designed to contain AgNCs and guanine (G)-rich DNA sequence, respectively. In

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