Supporting Information

Hairpin-functionalized DNA tetrahedral for miRNA imaging in living cells via self-assembly to form dendrimers

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Table S1. Sequences of Oligonucleotides Used in This Study

Name	Sequence (5′ -3′)
H1	GACGACTAATAAGATTCAACATCAG/iBHQ1-dT/CTGATAAGCGCGCTCTCATAGGCGCTTATCAGACT-FAM
H2	TGTCCTAATTAGAATATAAGCGCTCCGAGCCGGTCGAAATGAGAGCGCGCTTATCAGACACCGGCTCGGAG
A1	ATCTTATTAGTCGTCTTCTCCAAGTCTACCTTGCTACACGACGCCATAGTAAAAAAAAAAA
A2	ATTCTAATTAGGACATTCACAGCAGTGCAGTGTAGCAAGAGGCGAGGGTCC
A3	ATCTTATTAGTCGTCTTCACTGCTGTGAAACACTACGTGTCTACTATGGCG
A4	ATTCTAATTAGGACATTAGACTTGGAGGCCACGTAGTGTTTGGACCCTCGC
miRNA-21	UAGCUUAUCAGACUGAUGUUGA
miRNA-141	UAACACUGUCUGGUAAAGAUGG
Let-7a	UGAGGUAGUAGGUUGUAUAGUU
Let-7b	UGAGGUAGUAGGUUGUGUGGUU
Let-7c	UGAGGUAGUAGGUUGUAUGGUU
MUC1 aptamer	GGCTATAGCACATGGGTAAAACGACTTTTTTTTTTT

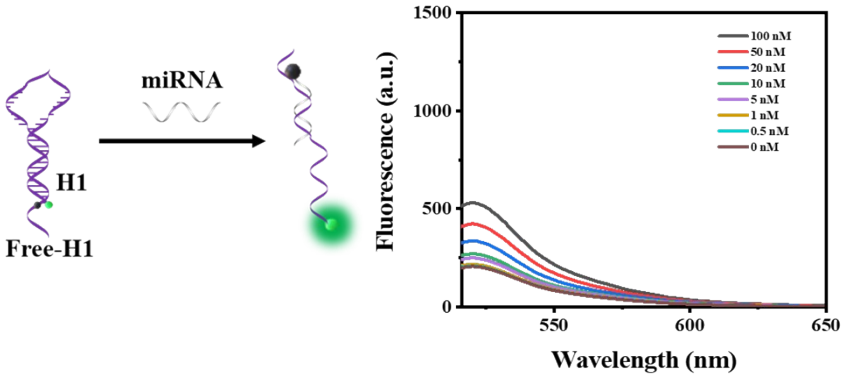

Figure S1. In vitro fluorescence response of free-H1. Schematic and fluorescence emission spectra of free-H1 with various concentrations of miRNA-21.

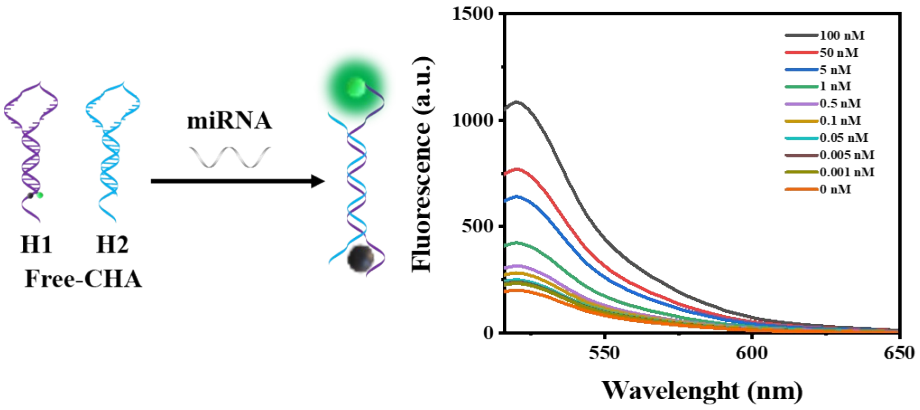

Figure S2. In vitro fluorescence response of free-CHA. Schematic and fluorescence emission spectra of free-CHA with various concentrations of miRNA-21.

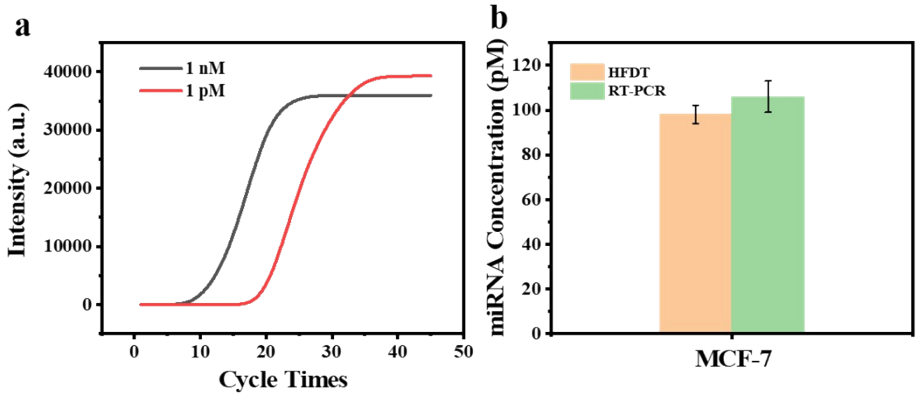

Figure S3. (a) RT-PCR measurements of miRNA-21 levels in different concentrations. (b) Measurements of miRNA-21 levels in MCF-7 cells by the HDFT and RT-PCR.

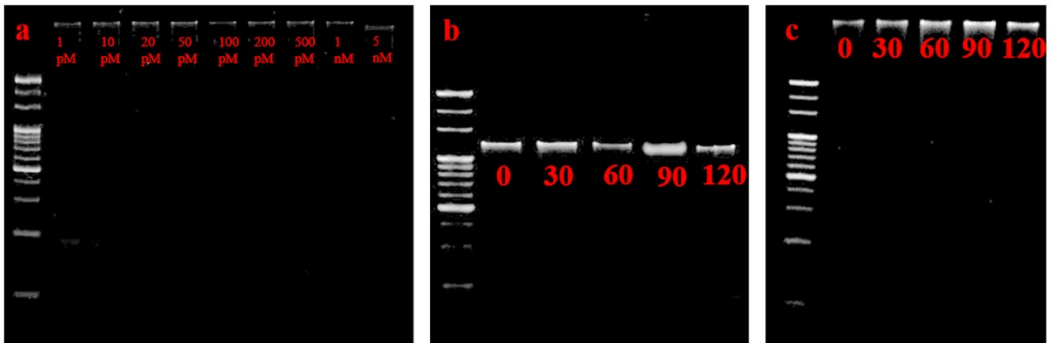

Figure S4. PPAGE characterization of (a) HFDT with different concentrations of miRNA; the stability of the (b) HFDT and (c) target-triggered assembly dendrimers structure.

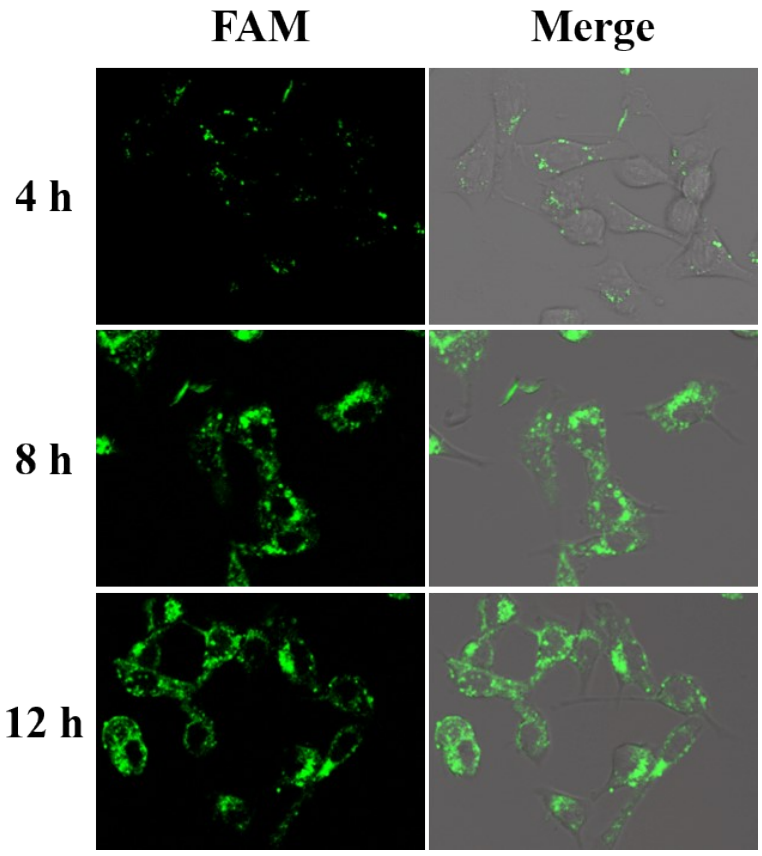

Figure S5. Confocal fluorescence images of MCF-7 cells after incubation with HFDT at different times.

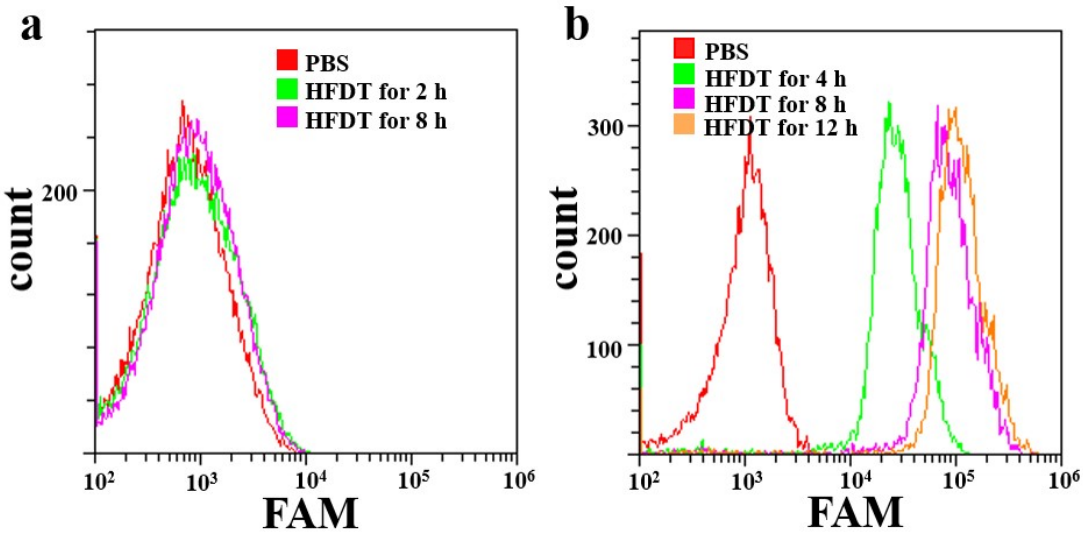

Figure S6. Flow cytometric quantification of (a) L02 cells and (b) MCF-7 cells treated with PBS and HDFT in different times.

Table S2. The summary of recent miRNA-21 analytical methods in comparison with our strategy.

Analysis method	Detection Technique	LOD	Reference
DNA tetrahedrons based fluorescent biosensor	Fluorescence	620 pM	1
Strand displacement reaction	Photoluminescence	4.5 pM	2
Pyrenelabelled Y-shape DNA nanoprobe based Fluorescent biosensor	Fluorescence	200 pM	3
Accelerated-DzFN	Fluorescence	1.2 pM	4
Hairpin-functionalized DNA tetrahedron (HFDT)	Fluorescence	0.8 pM	This work

References

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