

Electronic Supplementary Information (ESI) for Programmable, Universal DNzyme Amplifier Supporting Pancreatic Cancer-Related miRNAs Detection

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Table S1. The DNA/RNA sequences information (Note: _ represents mismatch bases).

Names	Sequence (from 5' to 3')
substrate-10b	BHQ1-CACTAT/rA/GGAAGAGAT-FAM
DNzyme-10b	TAGAACCGAATTT- GTGTCTCTTCTCCGAGCCGGTCGAAATAGT
blocker-10b	AAGAGACACAAATTCGGTTCTACAGGGTA
DNA-10b	TACCCTGTAGAACCGAATTTGTG
miR-10b	UACCCUGUAGAACCGAAUUUGUG
mis-1-10b	TACA <u>CT</u> GTAGAACCGAATTTGTG
mis-2-10b	TACA <u>AT</u> GTAGAACCGAATTTGTG
mis-3-10b	TACA <u>AT</u> GTAGAAGCGAATTTGTG
mis-4-10b	TACA <u>AT</u> GTAGAAGCTAATTTGTG
substrate-21	BHQ1-AAGCTACAG/rAU/GTCCGATACAGCACT-FAM
DNzyme-21	AGTGCTGTATCGGACAGGCTAGCTACAACGACTG- TAGCTTATCAGAC
blocker-21	TCAACATCAGTCTGATAAGCTACAGATGTCCGATACAG- CACT
miR-21	UAGCUUAUCAGACUGAUGUUGA
mis-1-21	TAGCTTATCAGACTGAT <u>CT</u> TGA
mis-2-21	TAGCTTATCAGAC <u>AG</u> AT <u>CT</u> TGA
mis-3-21	TAGCTT <u>TT</u> CAGAC <u>AG</u> AT <u>CT</u> TGA
mis-4-21	TAGCTT <u>TT</u> CAC <u>AC</u> AGAT <u>CT</u> TGA

Table S2. Comparison of miR-10b detection between this work and other strategies.

Probe	Methods	Detection limit	Reaction time	Reference
Gold Nanotags	LSPR	0.002 nM	60 min	14
SGNP-MBs	Fluorescence	0.01 nM	60 min	17
nGO-PEGMA	Fluorescence	0.86 nM	90 min	24
miRNA-RISC	Fluorescence	13.4 nM	120 min	25
Dzm/blocker	Fluorescence	0.89 nM	15 min	This work

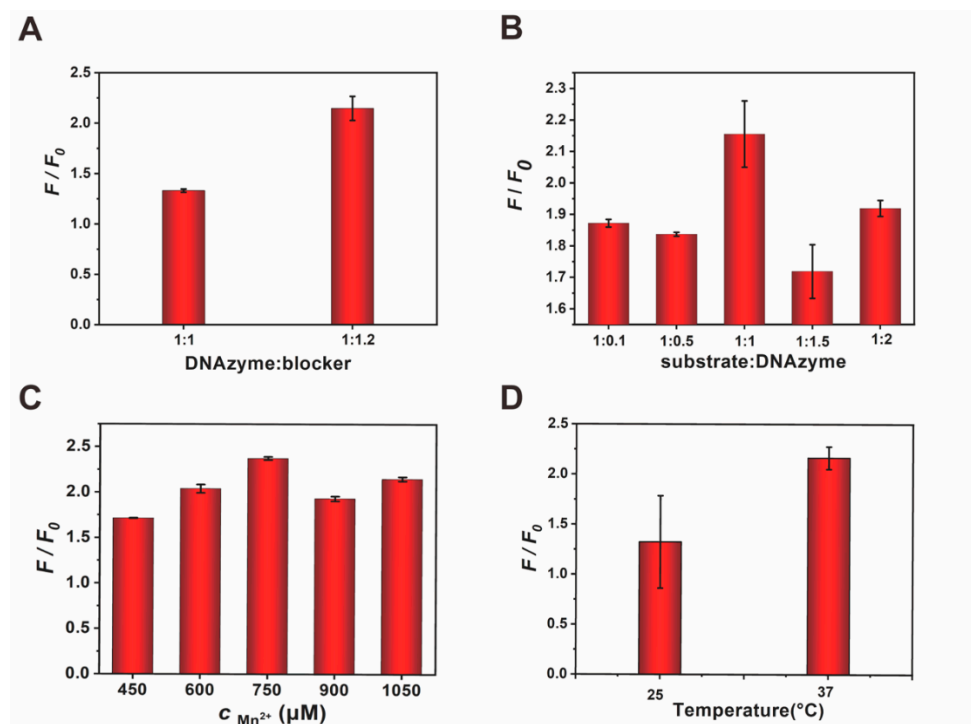


Figure S1. Optimization of experimental conditions for miR-21 detection. **(A)** Optimization of the ratio between DNAzyme and blocker. **(B)** Optimization of the ratio between substrate DNA and DNAzyme. **(C)** Optimization of Mn^{2+} concentration. **(D)** Optimization of temperature for miR-21 detection (Error bars represented the standard deviation of three determinations).