

Supporting information

Magnetic-enhanced fluorescence sensing of tumor miRNA by combination of MNPs@PDA with duplex specific nuclease

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Table S1. Sequences of miRNA and probes used in the experiment

Name	Sequence (5' -3')	Length (nt)
P-141 (P ₀)	FAM-CCATCTTTACCAGACAGTGTTA	22
miRNA-141	UAACACUGUCUGGUAAAGAUGG	22
miRNA-21	UAGCUUAUCAGACUGAUGUUGA	22
OM-RNA	UAACAAUGUCUGGUAAAGAUGG	22
SM ssDNA	TGAGGTAGTAGGTTGTGTGGTT	22

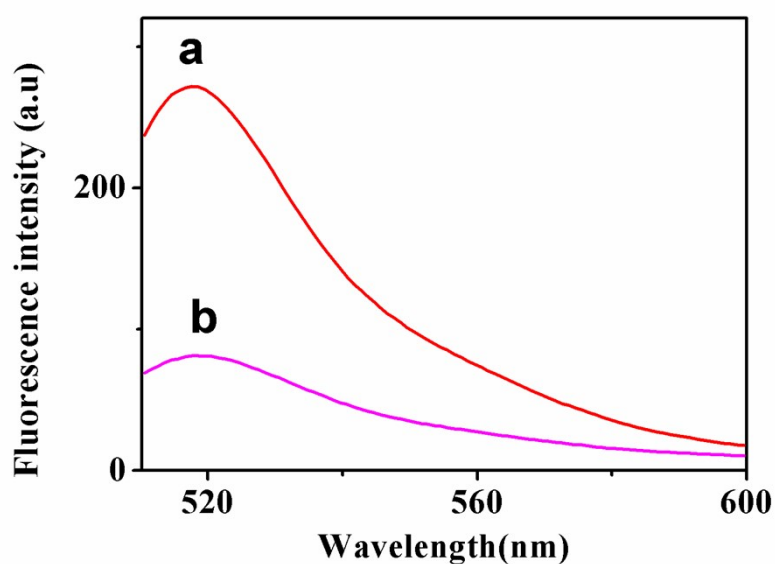


Fig. S1. Fluorescence emission spectra of (a) FAM-DNA+MNPs@PDA (b) FAM-DNA+ MNPs@PDA +Ca²⁺.

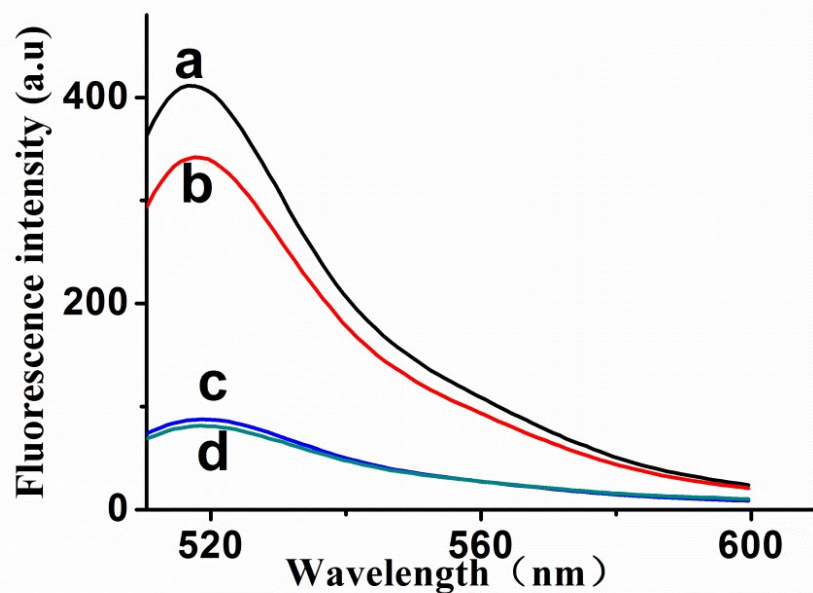


Fig. S2. Fluorescence emission spectra of (a) DSN+miRNA+FAM-DNA+PDA@MNPs (after magnetic absorption) (b) DSN+miRNA+FAM-DNA+PDA@MNPs (before magnetic absorption) (c) DSN+FAM-DNA+PDA@MNPs (after magnetic absorption) (d) DSN+FAM-DNA+PDA@MNPs (before magnetic absorption).

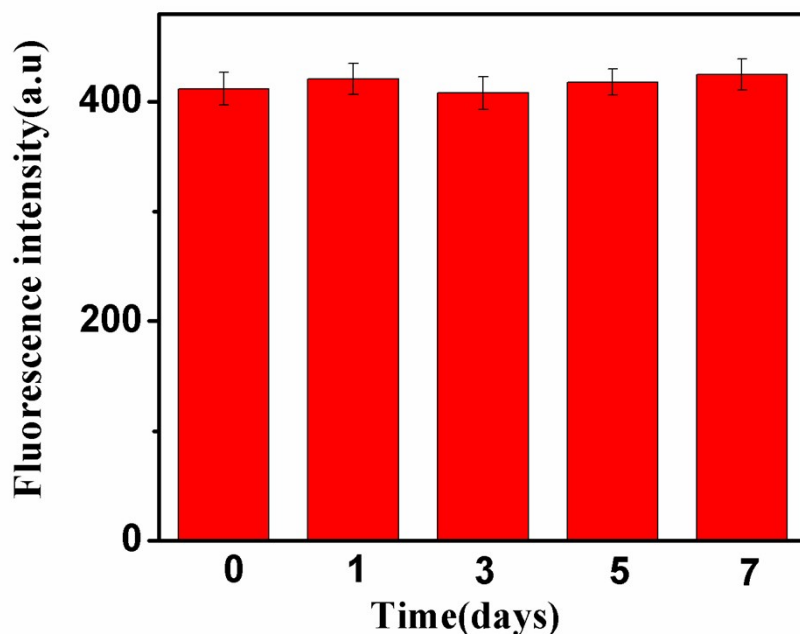


Fig. S3. Stability test for the biosensor over one week. The concentration of miRNA-141 is 500 pM.

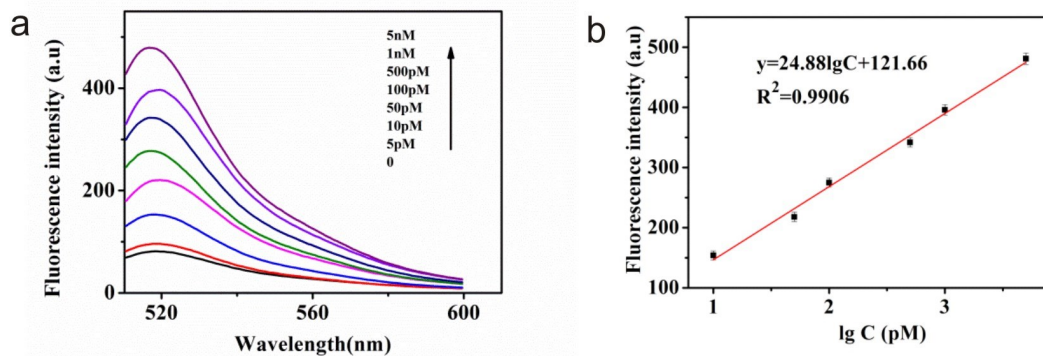


Fig. S4. Fluorescence emission spectra of P0 (40 nM) before magnetic absorption with varying concentrations of T1 (a to j: 0, 5 pM, 10 pM, 50 pM, 100 pM, 500 pM, 1 nM, 5 nM, respectively). (b) Scatter plot of the fluorescence intensity vs. logarithm of T1 concentration.