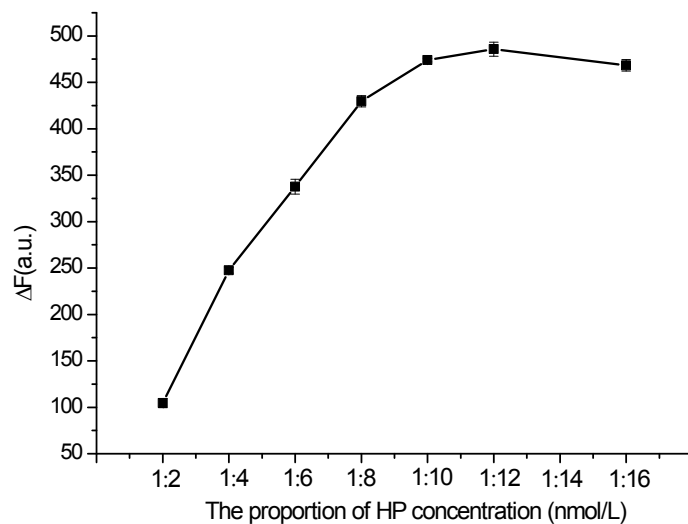


## Rapid and free-label fluorescence bioassay for microRNA based on Exonuclease III-assisted cycle amplification

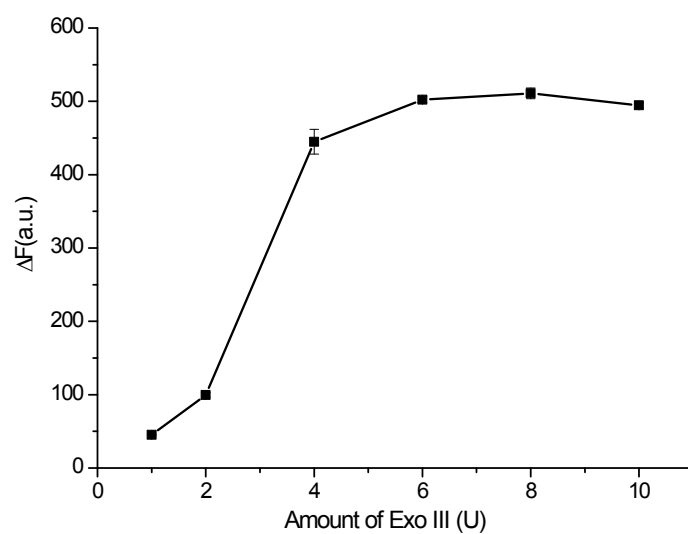
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Zhao

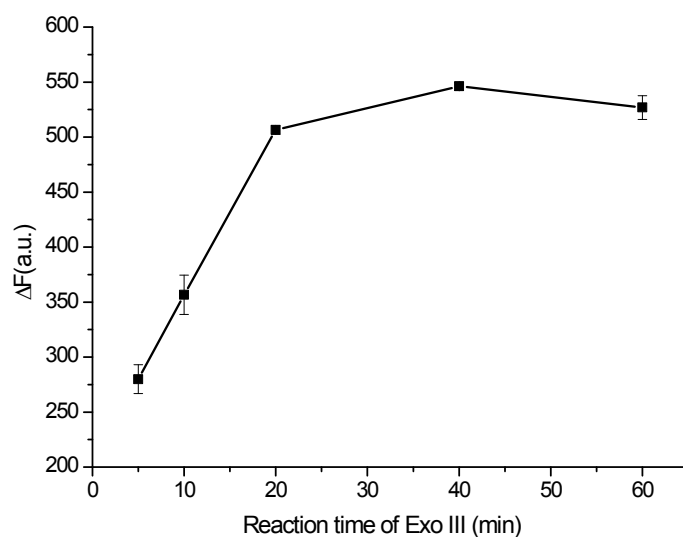
State Key Laboratory for Chemistry and Molecular Engineering of Medicinal  
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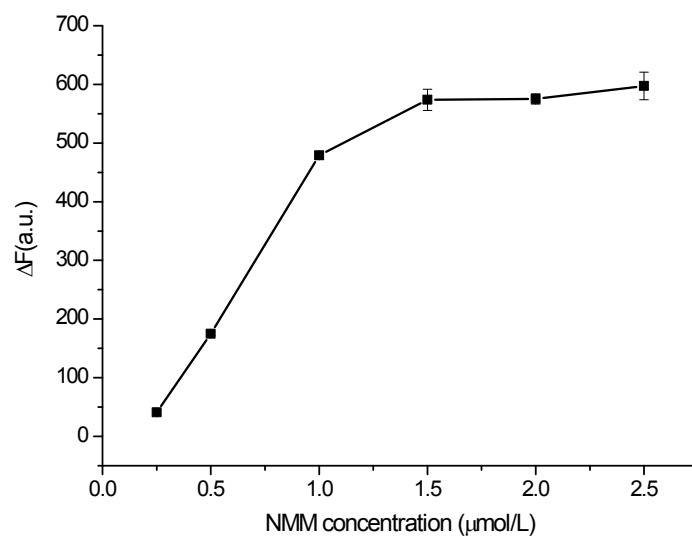
**Figure S1** The effect of HP concentration on fluorescence changes ( $\Delta F$ ). The concentrations of Exo III, miRNA-122, NMM are 4 U, 15 nM, 2  $\mu$ M.



**Figure S2** Amount of Exo III on fluorescence changes ( $\Delta F$ ). The concentrations of HP1, HP2, miRNA-122, NMM are 50 nM, 600 nM, 15 nM, 2  $\mu$ M.



**Figure S3** Reaction time of Exo III on fluorescence changes ( $\Delta F$ ). The concentrations of HP1, HP2, Exo III, miRNA-122, NMM are 50 nM, 600 nM, 6 U, 15 nM, 2  $\mu$ M.



**Figure S4** The concentration of NMM on fluorescence changes ( $\Delta F$ ). The concentrations of HP1, HP2, miRNA-122, Exo III are 50 nM, 600 nM, 15 nM, 6 U.

Table S1 The comparison of miRNA detection methods

Method	Mechanism	Linear range	LOD	Time	Reference
Chemiluminescence	CRET and WS <sub>2</sub> nanosheet	0.5–10 nM	180 pM	3 h and 6 min	[1]
Fluorescence	MnO <sub>2</sub> nanosheets and CHA	1-50 nM	0.33 nM	2 h	[2]
Fluorescence	target-triggered free-enzymatic amplification and GO	0.01~100 nM	10 pM	6 h and 10 min	[3]
Electrochemical	sandwich detection onto magnetic microcarriers and HCR	0.2-5 nM	60 pM	1 h and 48 min	[4]
Fluorescence	Gold Nanoparticles	3.8 pM-10 nM	3.8 pM	7 h and 10 min	[5]
Fluorescence	Graphene Quantum Dots and Pyrene-Functionalized Molecular	0.1-200 nM	100 pM	2 h and 40 min	[6]
Fluorescence	G-quadruplex and Exonuclease III to achieve dual signal amplification	0.25-4 nM	6 pM	1 h	This work

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