

Supplementary Information

**Highly sensitive and specific electrochemical biosensor for
microRNA 21 coupling catalytic hairpin assembly with rolling circle
amplification**

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To verify whether the CHA and RCA can proceed as designed, a native polyacrylamide gel electrophoresis (PAGE) experiment was carried out.

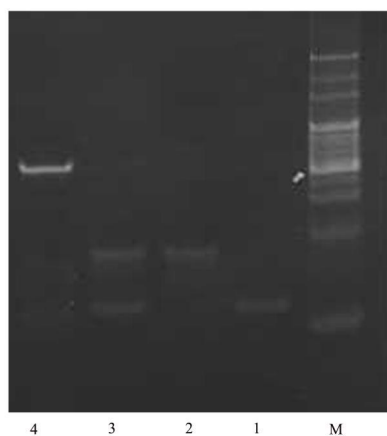


Fig. S1 The native PAGE analysis: M: 20 bp DNA Ladder Marker, lane 1: H2, lane 2: H1, lane 3: H1 + H2, lane 4: target + H1 + H2.

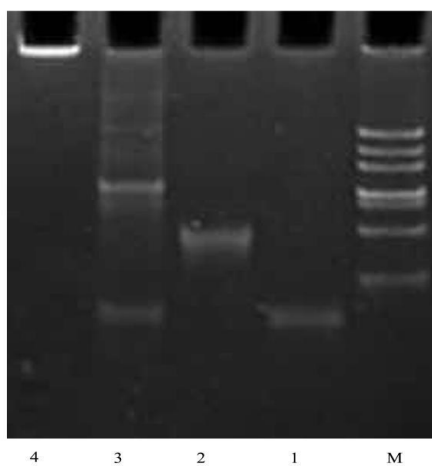


Fig. S2 The native PAGE analysis: M: 50 bp DNA Ladder Marker, lane 1: primer, lane 2: circle template, lane 3: primer + circle template, lane 4: RCA products.

Table S1 The comparison of our research with other reported electrochemical biosensors

Target	Strategy	LOD	Linear range	Reference
miRNA21	CHA with RCA	290 fM	0.5-12500 pM	This work
miRNA145	Doxorubicin	0.27 nM	2.0-80.0 nM	1
miRNA24	MWCHTs	1 pM	3.0-2500 pM	2
miRNA143	RCA	3.2 nM	10 nM-1 μ M	3
miRNA21	Gold nanoparticles	100 pM	200 pM-388 nM	4
miRNA21	3D DNA origaminanostructures	10 pM	100 pM-1 μ M	5

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