Electronic Supplementary Information (ESI)

An isothermal electrochemical biosensor for sensitive detection of microRNA based on catalytic hairpin assembly and supersandwich amplification

Hua Zhang, Qing Wang*, Xiaohai Yang, Kemin Wang*, Qing Li, Zhiping Li, Lei Gao, Wenyan Nie, Yan Zheng

State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry and Chemical Engineering, Key Laboratory for Bio-Nanotechnology and Molecular Engineering of Hunan Province, Hunan University, Changsha 410082, P. R. China.

* E-mail address: wwqq99@hnu.edu.cn, kmwang@hnu.edu.cn.; Tel/Fax: +86-731-88821566.

S-1 Characterization of report probe

The HRP-DNA conjugate was characterized using a 12% SDS-PAGE experiment. As shown in **Fig S1**, the band of HRP in the lane 1 was located under 44.3 KDa, which was in agreement with the molecular weight of HRP (*ca.* 44 KDa). Upon conjugation with DNA L1, the migration of the HRP-DNA conjugate band in the lane 2 was less than that of HRP. Presumably, the reason was that DNA L1 could conjugate with HRP and increased the molecular weight of HRP (each DNA is around 10 K). In addition, since DNA L1 was not conjugated with HRP in the mixture of DNA L1 and HRP, little difference was observed between lane 1 and lane 3. The results demonstrated that the HRP-DNA conjugate was formed.

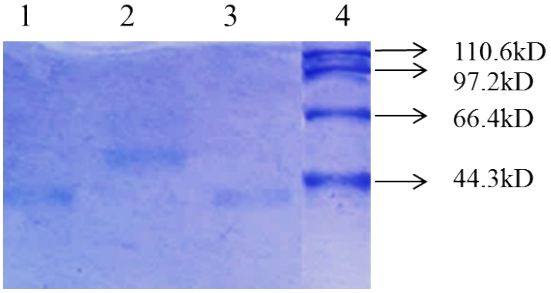

Fig. S1 12% SDS-PAGE gel electrophoresis image for HRP-DNA conjugate. Lane 1: mixture of 0.25 mM DNA L1 and 1 mg/mL HRP; lane 2: HRP-DNA conjugate; lane 3: 1 mg/mL HRP; lane 4: marker.