## Signal-on Electrochemical Detection of Antibiotics Based on Exonuclease III-assisted Autocatalytic DNA Biosensing Platform

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## Validation of cycle II



Fig. S1 Gel electrophoresis image of cycle II. lane M, DNA marker; Lane 1, HP2; lane 2, HP2 incubated with *Helper*; lane 3, HP2 incubated with *Helper*, trigger and Exo III.

In order to demonstrate the validation of cycle II, gel electrophoresis analysis was proceeded. As shown in Fig. S1, Lane M is the DNA marker. Lane 1 displayed a bright band of our designed HP2. After incubation with *Helper*, a new band was observed on the image, indicating that the hybridization of HP2 and *Helper* resulted in its structure switch and producing a ds-DNA (lane 2). As seen from lane 3, two bands were observed in the presence of trigger and Exo III. The top band demonstrated the same mobility with that of HP2 appeared on lane 1, indicating the HP2 reforms a "close" probe structure. The bottom one demonstrated the band of trigger, indicating the hybridization between trigger and *Helper* triggers the Exo III cleavage process and the *Helper* was hydrolyzed.

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