Electronic Supplementary Material (ESI) for Analyst.

Supporting information

Dual entropy driven catalytic amplification reaction for ultra-sensitive and visible detection of Hg^{2+} in water based on thymine-Hg^{2+}-thymine coordination chemistry

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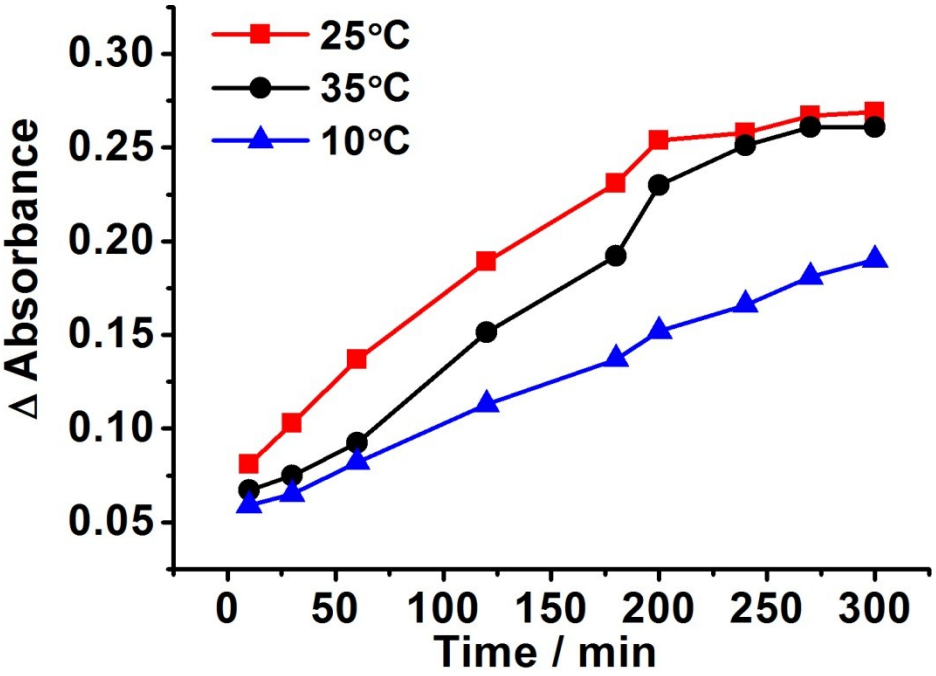

Fig. S1 The influence of reaction temperature on the Δ absorbance intensity of chromogenic reaction.

The high reaction temperature has high reaction rate, resulting short reaction time. However, the reaction time is longer at 35℃. This can be explaining as the binding rate of sequence T with DNA complex is slowed at 35℃ due to the decreased stability of formed duplex part.

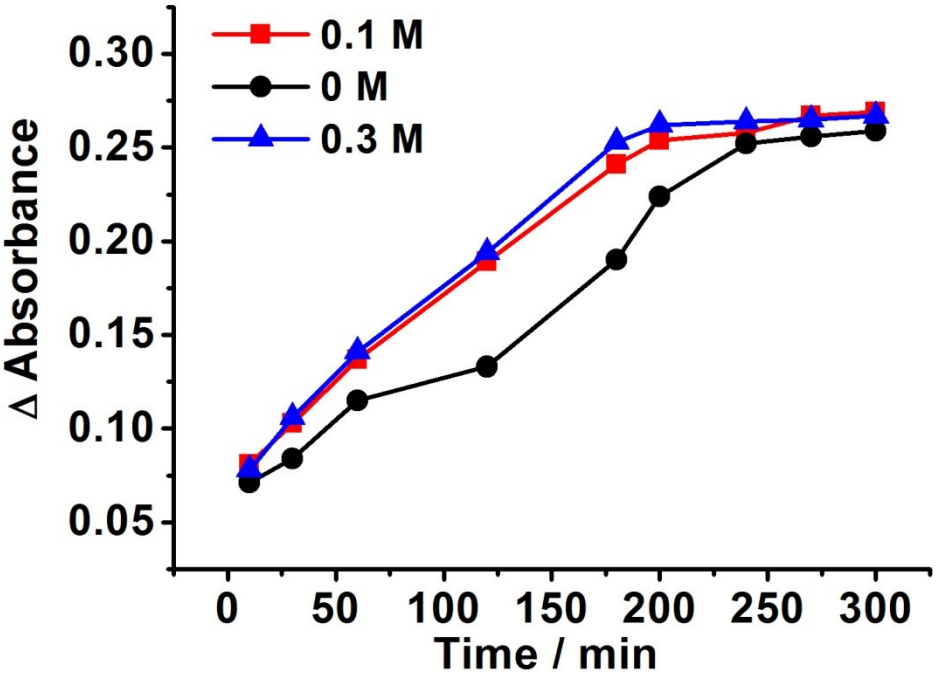

Fig. S2 The influence of NaCl concentration on the Δ absorbance intensity of chromogenic reaction.

The concentration of NaCl can effect the reaction rate. The reaction time of 0.1 M NaCl is about 40 min shorter that the time without NaCl, indicating NaCl is benefit to EDCR reaction. However, it shows the reaction time does not change obviously at 0.3 M NaCl.

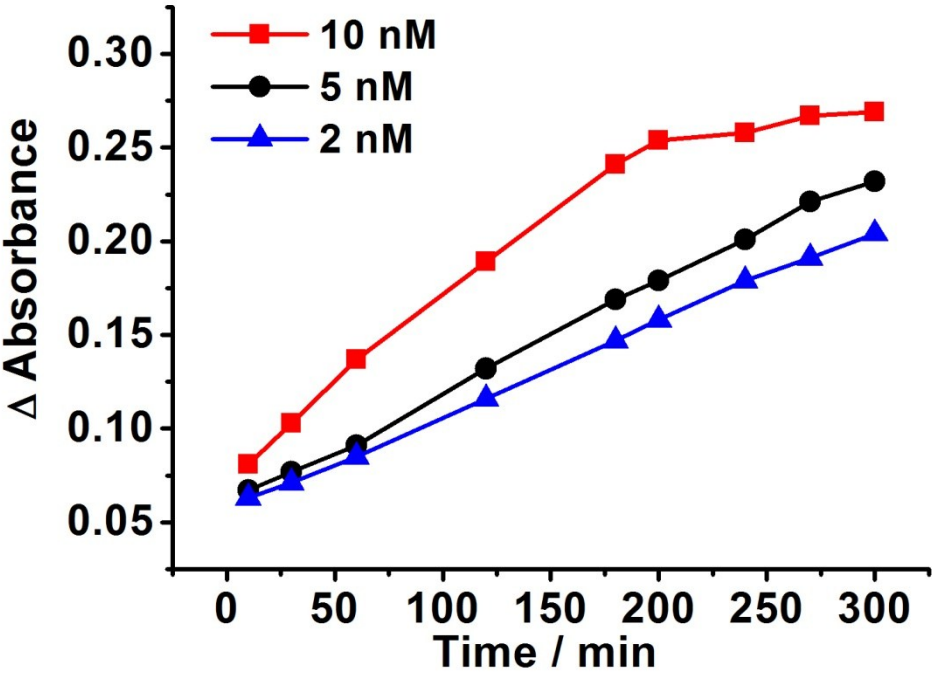

Fig. S3 The influence of concentration of DNA complex on the Δ absorbance intensity of chromogenic reaction.

The concentration of DNA complex has great influence to the reaction time. The reaction time shortens with the increasing of concentration of DNA complex, indicating the reaction rate is positive to the concentration of DNA complex.

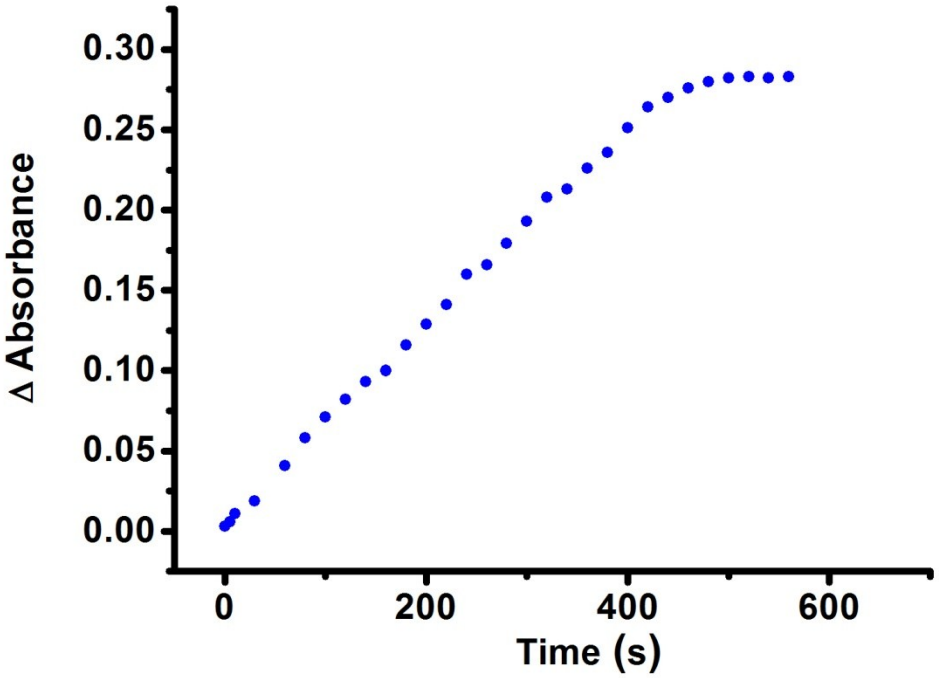

Fig. S4 The kinetics process of chromogenic reaction.

The Δ absorbance intensity increases linearly with the reaction time and levels off around 500 s.