Supporting Information

Enzyme-free and label-free visual strategy for detection of thrombin based on plasmonic nanoplatform

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Contents:

1. SEM image of nanofibers (Figure S1)

2. UV-vis spectra and corresponding calibration curve of standard DNA (B-H2) solution. (Figure S2)

3. Optimization of detection system (Figure S3)

4. Reusability of the plasmonic nanoplatform (Figure S4)

5. Stability of the plasmonic nanoplatform (Figure S5)

6. Comparison of this work with other enzyme-based colorimetric nucleic acid assays for thrombin (Table S1)

SEM image of nanofibers

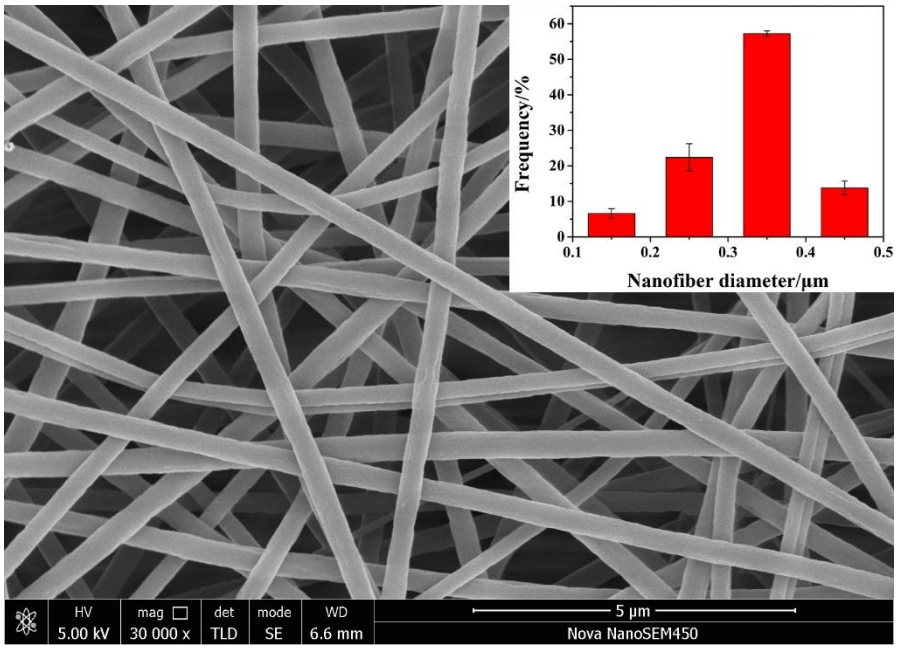

Figure S1 SEM image of nanofibers. The inset shows the diameter distribution of the nanofibers.

UV-vis spectra and corresponding calibration curve of standard DNA (B-H2) solution

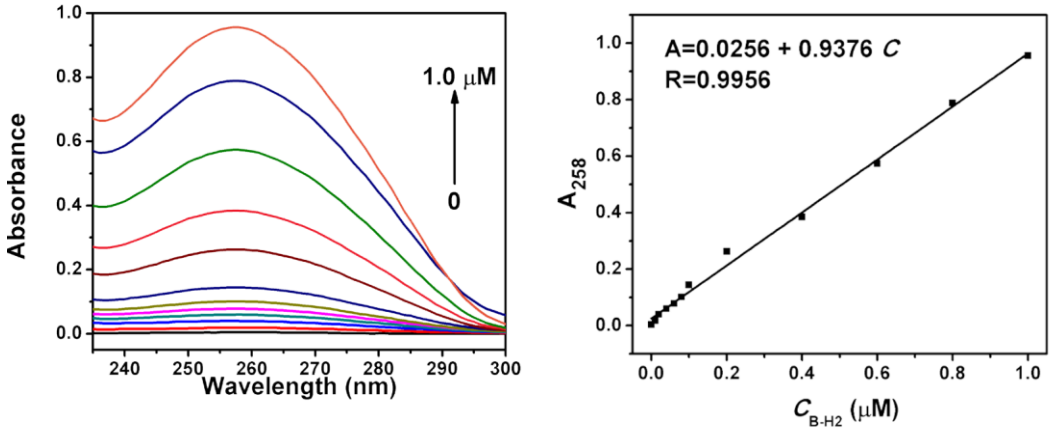

Figure S2 UV-vis spectra (A) and (B) corresponding calibration curve of standard DNA (B-H2) solution. Immobilization efficiency% = The concentration of immobilized B-H2/Initial concentration of B-H2 × 100%.

Optimization of detection system

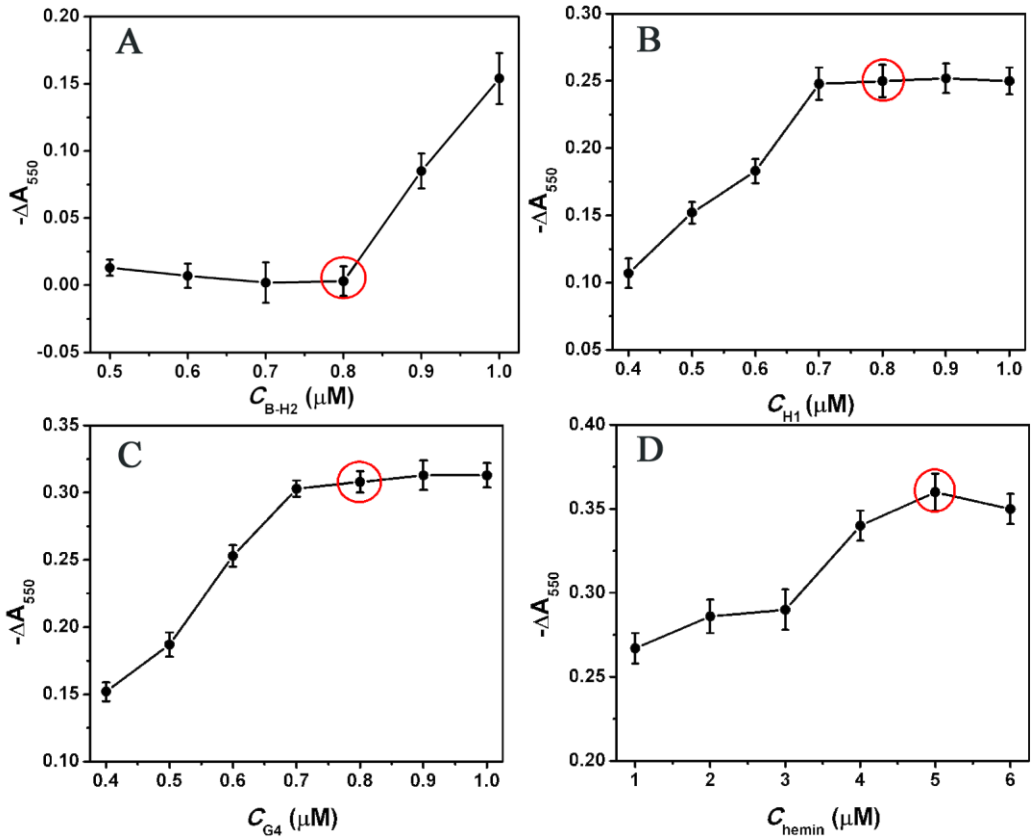

Figure S3 Absorbance decrement ($-\Delta A_{550}$) of the proposed sensors to 5 nM thrombin at different (A) B-H2, (B) H1, (C) G4, and (D) hemin. The optimized sensing conditions were chosen as follow: the the B-H2, H1, G4, hemin concentration was 0.8 μM, 0.8 μM, 0.8 μM and 5 μM, respectively. The CHA amplification incubation time was 7 h, and the G4 incubation time was 2 h.

Reusability of the plasmonic nanoplatform

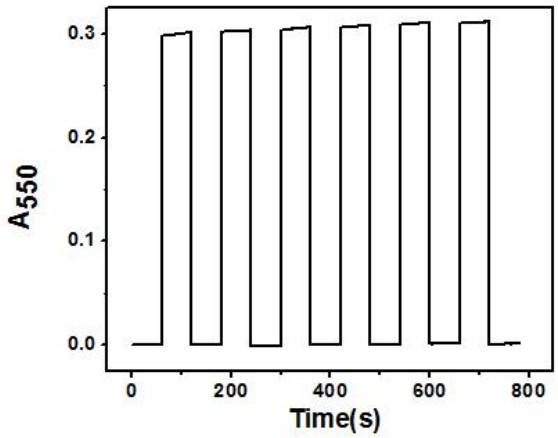

Figure S4 Reusability of the plasmonic nanoplatform by separately measuring its absorbance in six cycles of testing solution and blank buffer, respectively. The concentration of thrombin is 1

pM.

Stability of the plasmonic nanoplatform

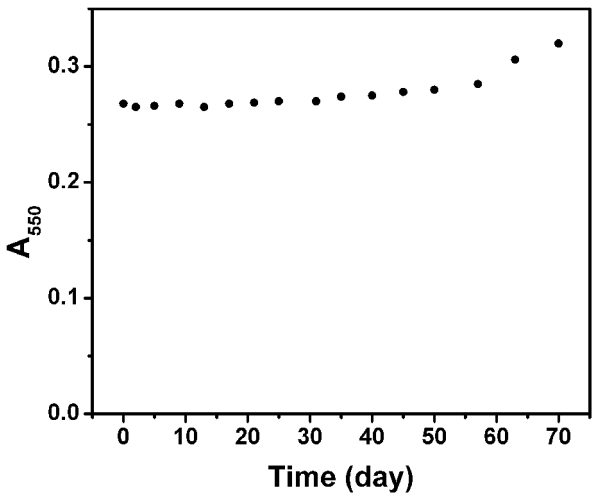

Figure S5 Stability of the plasmonic nanoplatform in Tris buffer (pH=7.5). The concentration of thrombin is 1 nM.

Tables S1 Comparison of this work with other enzyme-based colorimetric nucleic acid assays for thrombin

Strategy	LOD	Ref.
Target triggered HCR and in situ generation of DNAzymes and Pt nanozymes	100 pM	23
Arrest of RCA by protein-binding DNA aptamers by colorimetric method	15 nM	24
Snowball assembly of palindromic DNA-AuNPs and AuNPs-catalyzed silver enhancement	8.3 nM	25
Rolling circle amplification and hemin/G-quadruplex system	83 pg/mL	26
Label-free, enzyme-free visual strategy for detection of thrombin based on nanoplatform	1.0 pM	This work