Supplementary Material

Aptasensor based on entropy-driven catalytic amplification system for sensitive detection of acetamiprid in Chinese herbal medicine

Na Qin[1], Sunlei Yang[1], Rui Li[1], Hongyun Zhan[1], Lijuan Wang[1], Fengyun Li[2*], Jingbo Liu[1*]

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2.2 Instrumentation

Fluorescence spectra and UV-absorption spectra were recorded on a fluorescence spectrophotometer (F-4700, Hitachi High-Technologies Corporation) and UV-Vis spectrophotometer (U-3900, Hitachi High-Technologies Corporation), respectively. Gel electropherograms were obtained by a gel imager (Gel DocTM XR^{+}, BIO-RAD Technologies, USA).

2.4 Optimization of experimental conditions

The aptamer-cDNA base sequences were first screened by modifying the BHQ1 quenching motif at the aptamer-3' end and the FAM fluorescent motif at the cDNA-5' end. The number of candidate DNA bases [1-4] were 20 and 49 lengths, respectively. 1 μM aptamer, 1 μM cDNA and 10 mM $Mg(AC)_2$ were added in 1X TAE buffer. methanol was used as a control instead of acetamiprid to detect the change in the fluorescence value of the solution. After that, the incubation method was optimized by adjusting the order of adding the targets, which were aptamer, cDNA and target at the same time; aptamer and cDNA were added first, then target, and aptamer was mixed and incubated with acetamiprid, then cDNA was added. all the above incubation methods were performed at 25℃, and the aptamer was reacted with aminopyrimidine for 2h, and the cDNA was reacted for 4h. Finally, the TAE buffer and PBS phosphate solution as a buffer screen.

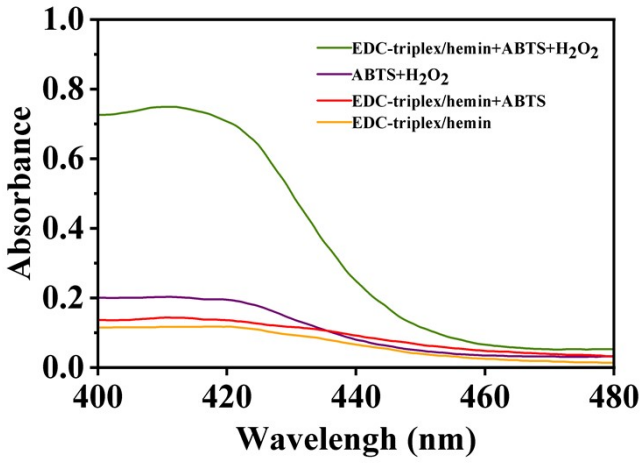

Fig. S1 Verifying the catalytic activity of G-quadruplex/hemin for hydrogen peroxide

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