Electronic Supplementary Material (ESI) for Analyst
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**Electronic Supplementary Information**

# Highly Stable Colorimetric Aptamer Sensor for Ochratoxin A through Optimizing the Sequence with the Covalent Conjugation of Hemin

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## 1. Binding affinity of EAD2-hemin complex

500 nM hemin was prepared in 100 mM phosphate buffer (pH 6.7) with 200 mM NaCl, 20 mM $MgCl_2$, and 5 mM KCl. Two additional adenosines were added on the 5'-end of original EAD2 sequence. EAD2 was dissolved in same buffer as used for hemin. Hemin and EAD2 mixtures with 6 different molar ratio were mixed and stood for at least an hour, and the dissociation constant ($K_d$) for the DNA-hemin complexes was determined by plotting the absorbance changes of hemin (0.5 μM) at 404nm against DNA concentrations (0 -10 μM). The $K_d$ for EAD2 was determined to be 770 nM.

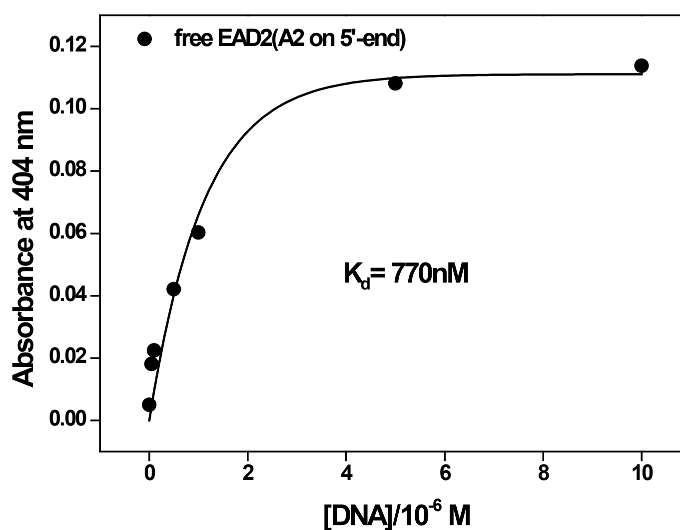


Figure S1. A plot for obtaining the dissociation constant for EAD2-hemin

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## 2. A plot of enzymatic reaction velocities of $OHD_0$

Each sample was dissolved in 100 mM phosphate buffer with 200 mM NaCl, 20 mM $MgCl_2$, and 5 mM KCl. Absorbance was measured for initial 5 min in each experiment. [$OHD_0$] = 500 nM, [hemin] = 1.5 μM.

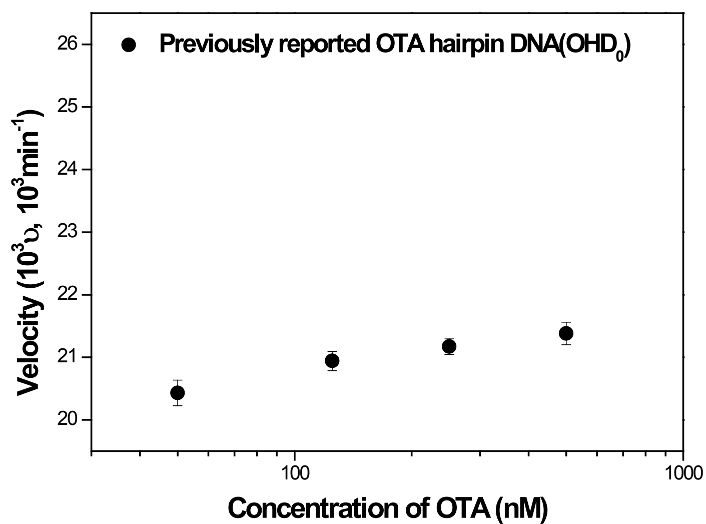


Figure S3. A plot of enzymatic reaction velocities of $OHD_0$ against different OTA concentration.

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### 3. Linear plots of enzymatic velocities of a few $OHD_1$ derivatives

Each sample was dissolved in 100 mM phosphate buffer with 200 mM NaCl, 20 mM $MgCl_2$, and 5 mM KCl. Absorbance was measured for initial 5minutes in each experiment.

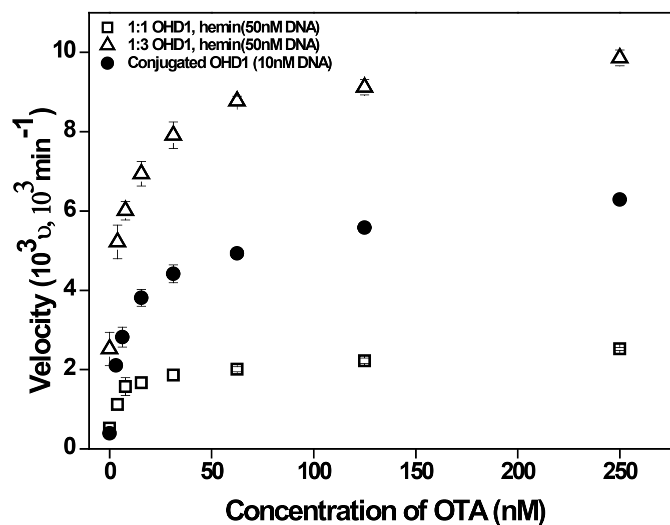


Figure S3. The linear plot of enzymatic velocities of $OHD_1$ with various hemin conditions