Electronic Supplementary Material

Ratiometric fluorescent aptasensor for convenient detection of ochratoxin A in beer and orange juice

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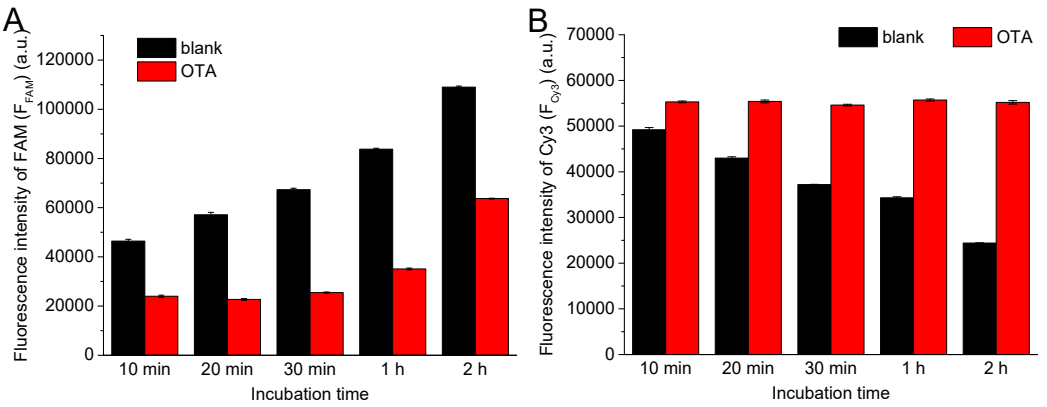

Fig. S1. Effects of incubation time on (A) F_{FAM} and (B) F_{Cy3}. Assay buffer containing 20 mmol/L Tris-HCl (pH 7.4), 5 mmol/L $CaCl_2$, 80 mmol/L NaCl and 0.1% (V/V) tween20 was used. OTA concentration was 500 nmol/L. For measurement of fluorescence intensity of FAM (F_{FAM}), excitation/emission was 485 nm/518 nm. For measurement of fluorescence intensity of Cy3 (F_{Cy3}), excitation/emission was 530nm/563 nm.

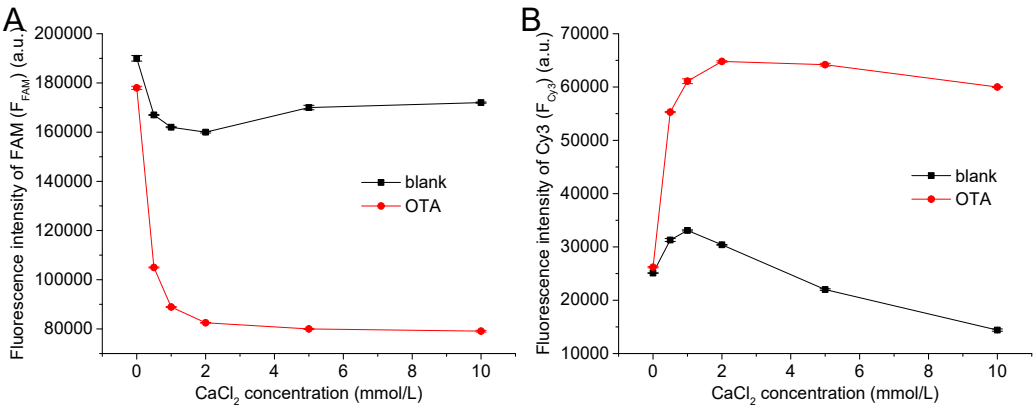

Fig. S2. Effects of concentration of $CaCl_2$ in assay buffer on (A) F_{FAM} and (B) F_{Cy3}. Assay buffer containing 20 mmol/L Tris-HCl (pH 7.4), 80 mmol/L NaCl, 0.1% (V/V) tween20 and different concentrations of $CaCl_2$ was used. OTA concentration was 500 nmol/L. For measurement of fluorescence intensity of FAM (F_{FAM}), excitation/emission was 485 nm/518 nm. For measurement of fluorescence intensity of Cy3 (F_{Cy3}), excitation/emission was 530 nm/563 nm.

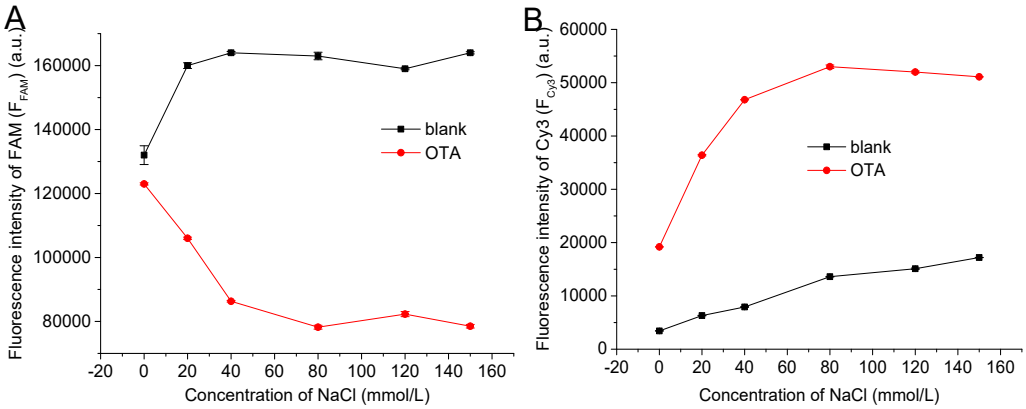

Fig. S3. Effects of NaCl concentration in assay buffer on (A) F_{FAM} and (B) F_{Cy3}. Assay buffer containing 20 mmol/L Tris-HCl (pH 7.4), 5 mmol/L $CaCl_2$, 0.1% (V/V) tween20 and different concentrations of NaCl was used. OTA concentration was 500 nmol/L. For measurement of fluorescence intensity of FAM (F_{FAM}), excitation/emission was 485 nm/518 nm. For measurement of fluorescence intensity of Cy3 (F_{Cy3}), excitation/emission was 530nm/563 nm.

Table S1 Comparison of some aptamer-based detection methods for OTA

Strategy	LOD	Detection range	Analysis time	Ref.
A ratio-based FRET analysis method	3.9 nmol/L	3.9-300 nmol/L	95 min	[20]
Aptamer-based molecular beacon	3.9 nmol/L	3.9-500 nmol/L	15 min	[22]
Graphene oxide nanosheet based fluorescent aptasensor	0.03 nmol/L	0.1-74.1 nmol/L	85 min	[23]
Colorimetric aptasensor based on gold nanoparticle	5 nmol/L	6.3-750 nmol/L	70 min	[38]
Exonuclease-assisted recycling amplification	0.96 nmol/L	5-200 nmol/L	40 min	[39]
Fluorescence anisotropy assay	3 nmol/L	3 nmol/L-3 μmol/L	40 min	[40]
Label-free aptasensor using SYBR gold and exonuclease	16.5 nmol/L	20-500 nmol/L	60 min	[41]
Ratiometric fluorescent aptasensor	0.3 nmol/L	0.6 nmol/L-5 μmol/L	30 min	this work

References cited by above Table S1:

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