Supplementary Information

Simultaneous Aptasensor Assay of Ochratoxin A and Adenosine triphosphate in Beer based on Fe_3O_4 and SiO_2 Nanoparticle as Carriers

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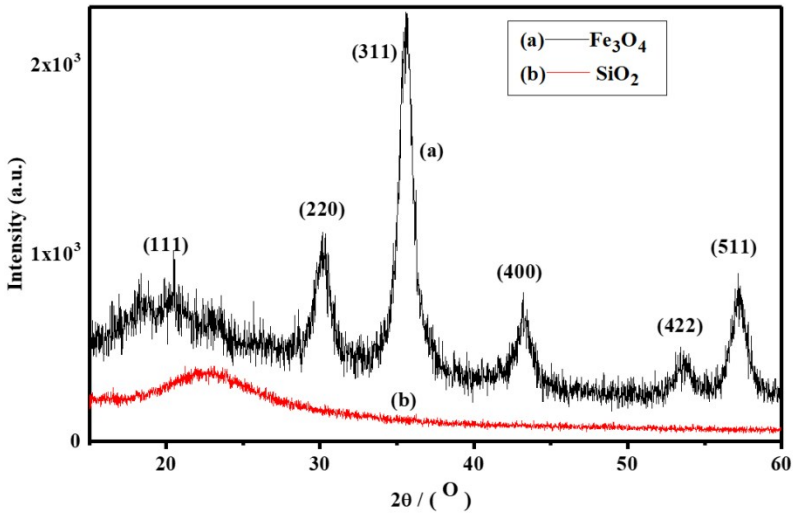

Fig. S1. XRD pattern of the Fe_3O_4 NPs (a) and SiO_2 NPs (b)

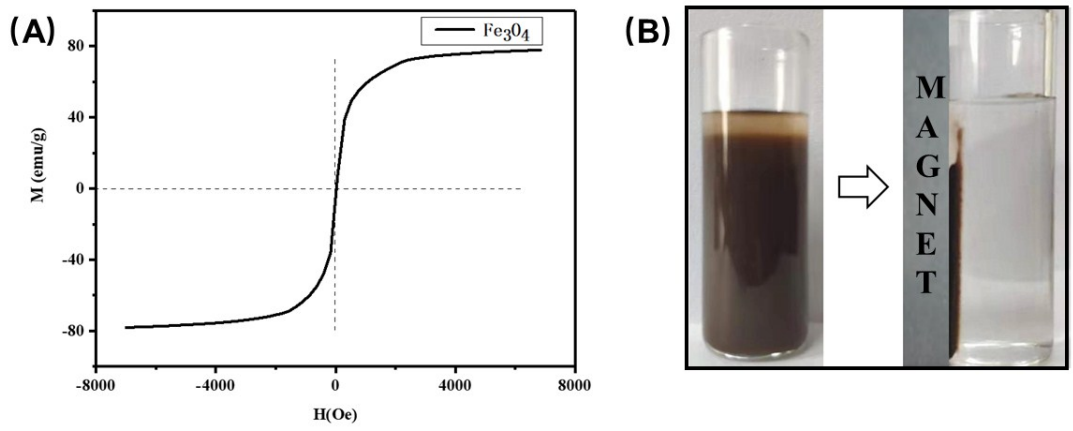

Fig. S2. (A) Magnetization curves of the Fe_3O_4 NPs ;(B) Magnetic responsiveness of Fe_3O_4 NPs

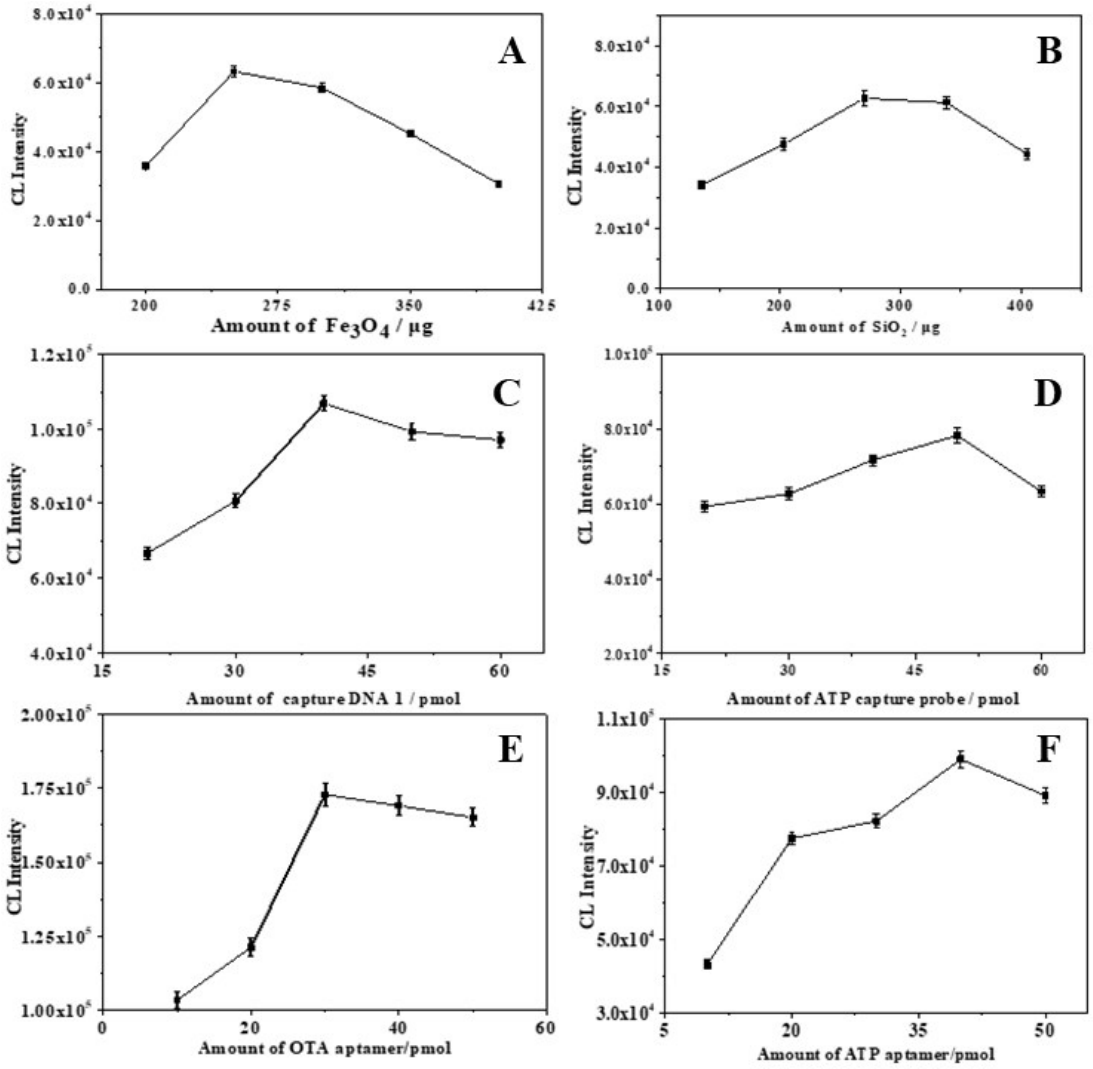

Fig. S3. CL intensity versus the amounts of Fe_3O_4 NPs (A), SiO_2 NPs (B), capture DNA 1 (C), capture DNA 2 (D), OTA aptamer (E) and ATP aptamer (F). Experimental conditions: (A) 20 pmol of capture DNA 1;20 pmoL of OTA aptamer; OTA concentration is 1.25×10^{-7} M.(B) 20 pmol of capture DNA 2 ;20 pmoL of ATP aptamer; ATP concentration is 1.00×10^{-7} M.(C) 250 μg Fe_3O_4 NPs; 20 pmol of OTA aptamer; OTA concentration is 1.25×10^{-7} M. (D) 270 μg SiO_2 NPs ; 20 pmol of ATP aptamer; ATP concentration is 1.00×10^{-7} M.(E) 250 μg Fe_3O_4 NPs and 40 pmol of capture DNA 1; OTA concentration is 1.25×10^{-7} M. (F) 270 μg SiO_2 NPs and 50 pmol of capture DNA 2; ATP concentration is 1.00×10^{-7} M. Every data point was the mean of 3 measurements.

Table S1. Comparison of different detection methods

Analytical target	Detection method	Label	LOD	Linear range	Reference
ATP	fluorometric method	biotin- labeled	140 nM	0.5~17.5 mM	[1]
ATP	photoelectrochemical immunoassay method	quantum dot - labeled	3.7 μM	10~350 μM	[2]
ATP	fluorescence method	Cy5-labeled	0.2 μM		[3]
OTA	fluorescent method	fluorescence of carboxyfluorescein- labeled	20 nM	0.02~0.4 μM	[4]
OTA	fluoresence method	label-free	16.5 nM	20~500 nM	[5]
OTA Aflatoxin B1	immunchromatographic method		6.19 nM 1.6 nM		[6]
OTA Zearalenone	immunochromatographic method		0.79 nM 1.82 nM	1.32~30 nM 3.33~124 nM	[7]
ATP Thrombin	fluoresence method	label-free	1.3 nM 0.007 nM	10~100 nM 0.1~100 nM	[8]
OTA Aflatoxin B1	SPR method		3.15 nM 1.89 nM	1.89~11 nM	[9]
OTA ATP	chemiluminiscence method	label-free	9.02 nM 9.31 nM	12.5~2500 nM 10~2000 nM	This paper

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