

Electronic Supplementary Material

A novel COOH-GO-COOH-MWNT/pDA/AuNPs based electrochemical aptasensor for detection of AFB1

Pengfei Wang^{a,b,#}, Bin Luo^{a,#}, Ke Liu^a, Cheng Wang^a, Hongtu Dong^a, Xiaodong Wang^a, Peichen Hou^a, Aixue Li^{a,b,*}

^a Beijing Research Center of Intelligent Equipment for Agriculture, Beijing Academy of Agriculture and Forestry Sciences, Beijing 100097, China

^b School of Agricultural Engineering, Jiangsu University, Jiangsu 212000, China

Figure S1: Optimization for the AFB1 sensor. **(A)** Time optimization for deposit gold nanoparticles, **(B)** cyclic number of polymeric dopamine, **(C)** SH-Apt concentration optimization and **(D)** dropping volume optimization of COOH-GO-COOH-MWNT nanocomposites, **(E)** potential optimization for deposit gold nanoparticles, **(F)** pH optimization for electrolyte, **(G)** ratio optimization for COOH-GO-COOH-MWNT nanocomposites, **(H)** concentration optimization for COOH-GO-COOH-MWNT nanocomposites.

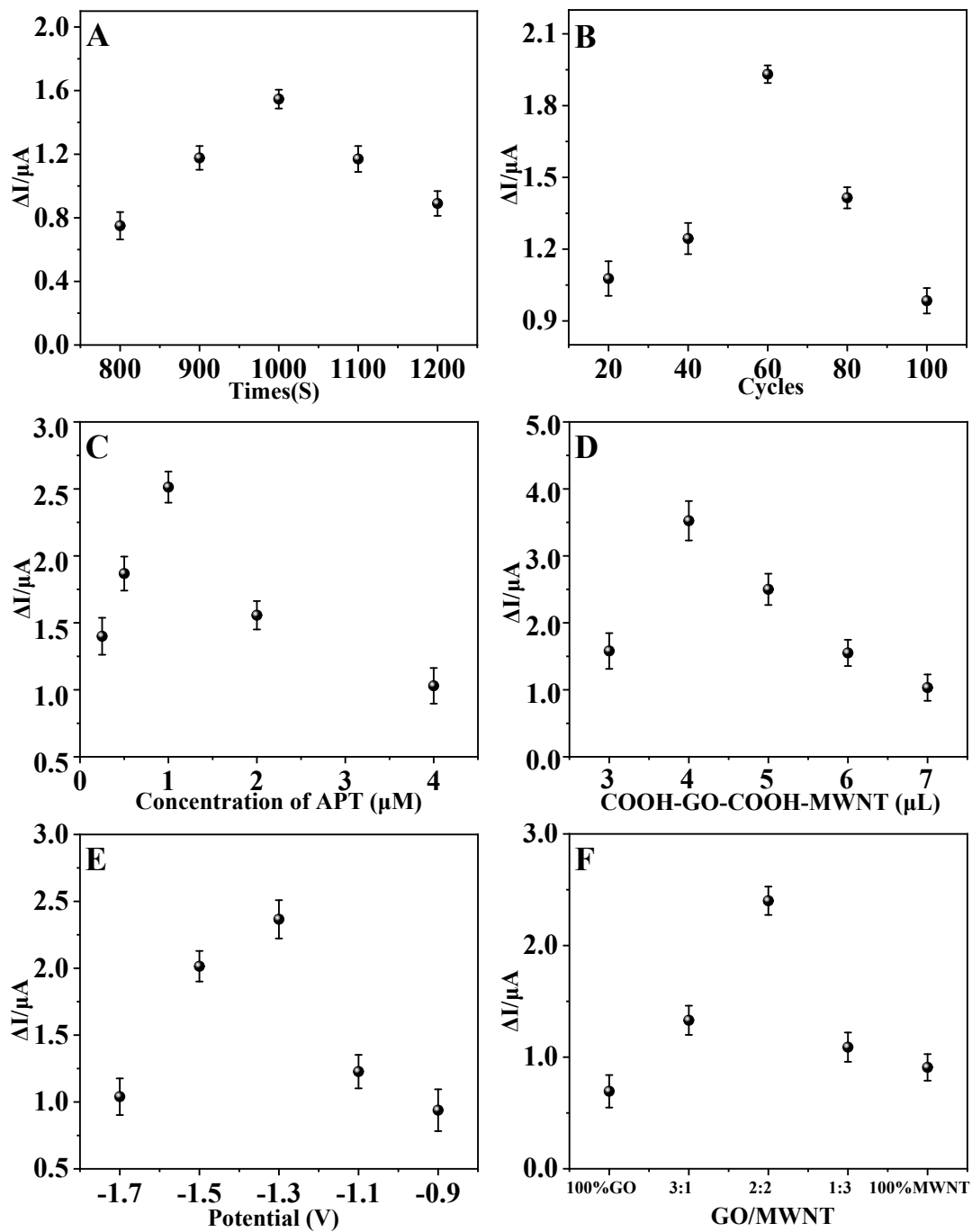
Figure S2: The same sensor was measured 6 times.

Figure S3: Six electrode was measured under the same conditions.

Figure S4: The same electrode was measured continuously for two weeks.

Table S1: Performance comparison of electrochemical aptasensors for AFB1.

Figure S1



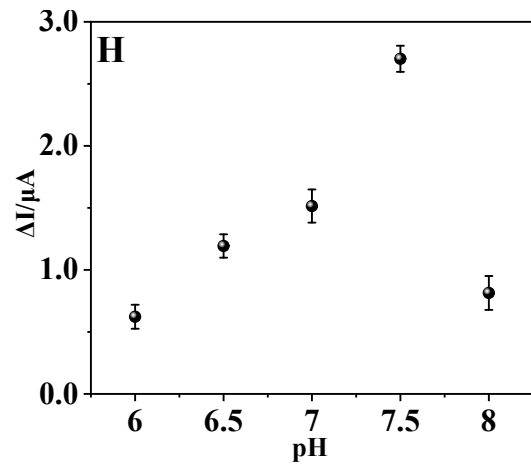
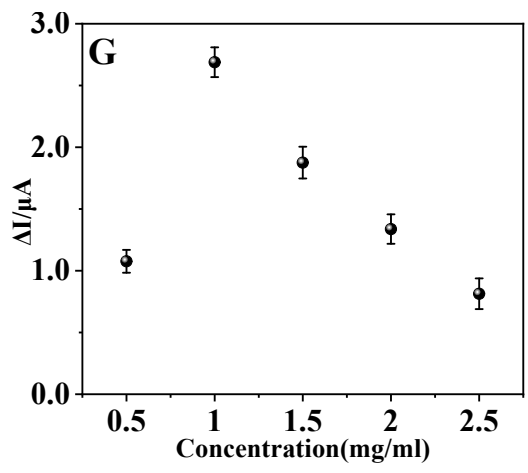


Figure S2

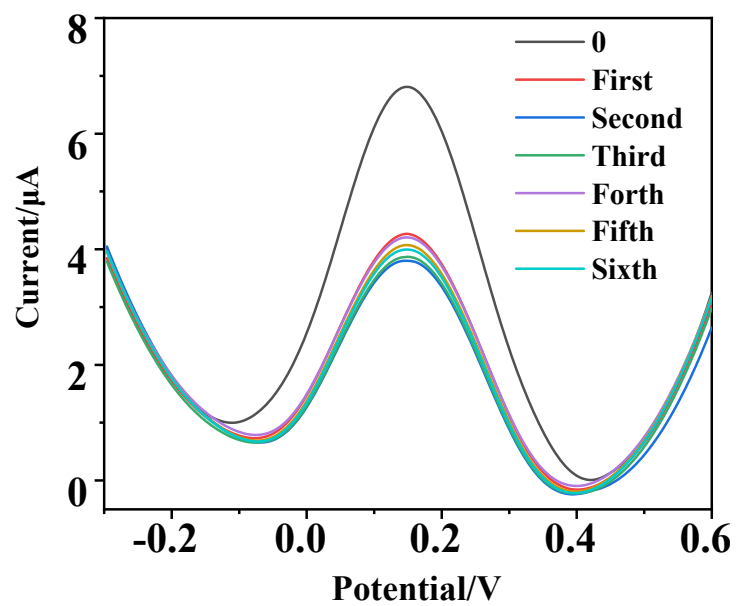


Figure S3

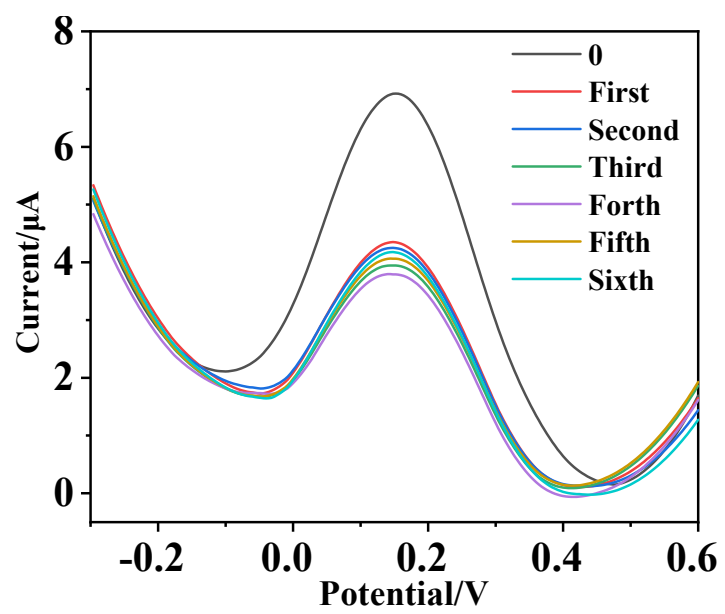


Figure S4

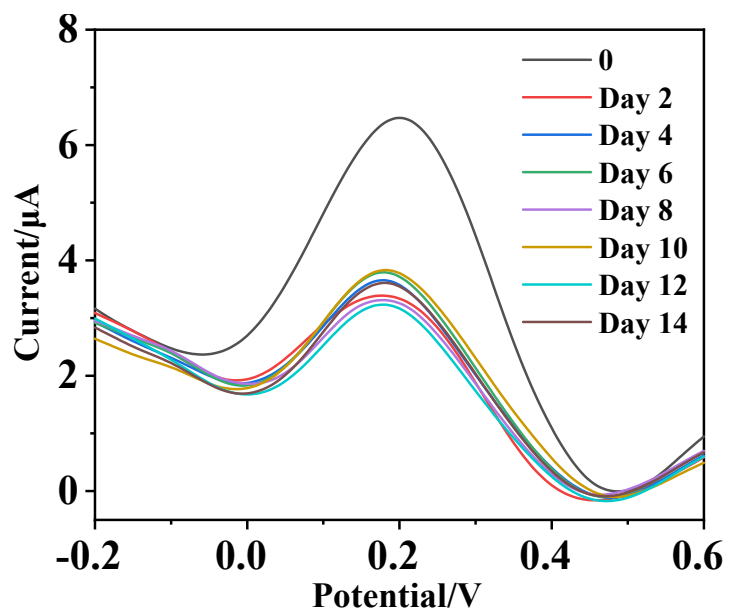


Table S1

Electrode	Method	Linear range(pg/ml)	LOD (pg/ml)	References
MCH/Fc-Apt1/AQ-ssDNA /AQ-hDNA/AuE	ACV	10-3000	4.3	28
Fc-Apt/Fc-aDNA/MCH/sDNA /AuNPs/GCE	ACV	0.1-10000	0.012	29
MCH/Apt/RGO@MoS ₂ @PANT /GCE	DPV	0.00001-0.001	0.000002	30
MCH/Apt/AuNPs/ZIF-8/GCE	DPV	10-100000	1.82	31
Fc-Apt/MCH/sDNA/AuNPs /THI-RGO/SPE	ACV	50-20000	16	32
MB/Fc/MCH/Apt/cDNA /AuNPs/MPETS/ITO	DPV	0.1-1000	0.0032	33
Apt/AFB1-BSA/NHS/PANI-PAA /GSPE	DPV	100-10000	86	34
MCH/Apt/AuNPs/pDA /COOH-GO-COOH-MWNT/SPE	DPV	0.0001-100	0.000015	This work