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Supplementary material

Label-Free and Highly-Sensitive Detection of Ochratoxin A Using One-Pot Synthesized Reduced Graphene Oxide/Gold Nanoparticles-Based Impedimetric Aptasensor

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Table S1 Investigations of glucose role in thermal reduction process for 3D-rGO/AuNPs nanocomposites

Sample	GO (mg)	$HAuCl_4 \cdot 4H_2O$ (μL)	Glucose (mg)	Temperature	Reaction Time
a	20	0	0	RT	0
b	20	400	20	RT	12 h
c	20	400	20	180 ℃	12 h
d	20	400	0	180 ℃	12 h

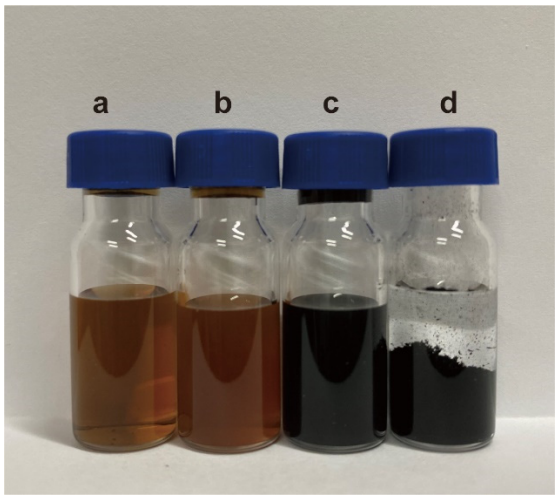

Figure S1 The optical images of sample a GO, b GO reduction without high temperature, c rGO/AuNPs with glucose and d rGO/AuNPs without glucose (detailed parameters were in Table S1)

Table S2 Optimized parameters of different volumes of $HAuCl_4 \cdot 4H_2O$ for 3D-rGO/AuNPs nanocomposites

Sample	GO (mg)	$HAuCl_4 \cdot 4H_2O$ (μL)	Glucose (mg)	Reaction time (h)
a	20	200	20	12
b	20	400	20	12
c	20	1000	20	12
d	20	1500	20	12

Table S3 Optimized parameters of different amounts of glucose for 3D-rGO/AuNPs nanocomposites

Sample	GO (mg)	$HAuCl_4 \cdot 4H_2O$ (μL)	Glucose (mg)	Reaction time (h)
a	20	400	20	12
b	20	400	500	12
c	20	400	1500	12

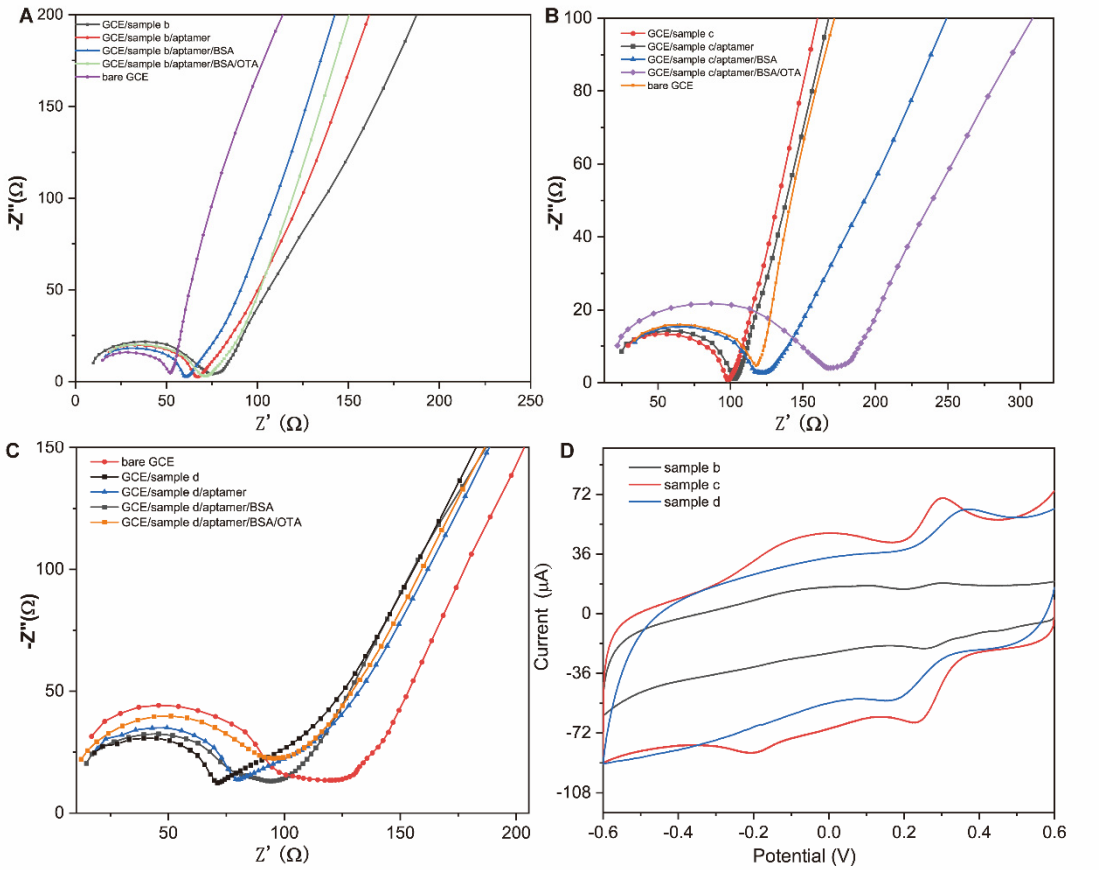

Figure S2 (A-C) The Nyquist plots of GCE after every step of fabrication of nanomaterial (b, c, d), aptamer, BSA, and OTA; (D) CV curves of sample b, c, and d fabricated GCE

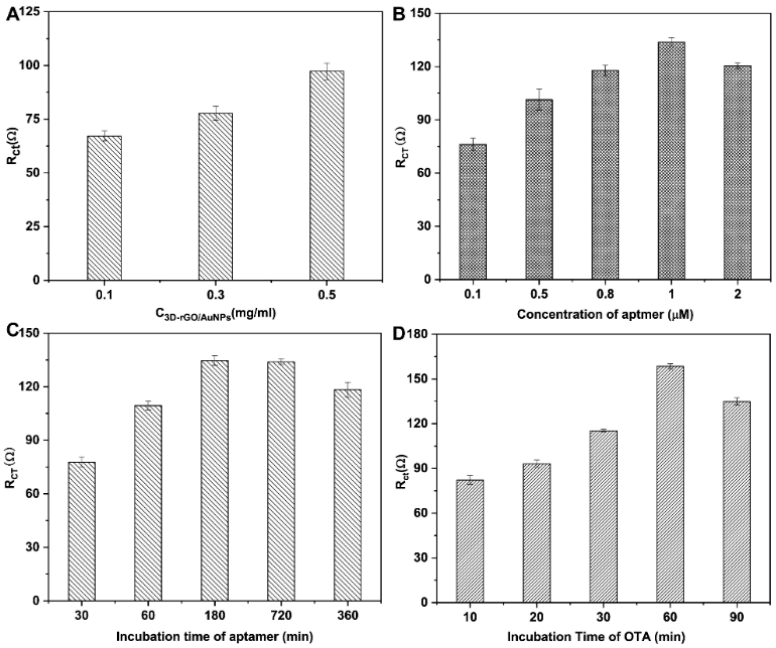

Figure S3 Optimization of (A) concentrations of 3D-rGO/AuNPs, (B) concentrations of aptamer, (C) incubation time of aptamer, (D) incubation time of OTA with aptamer.

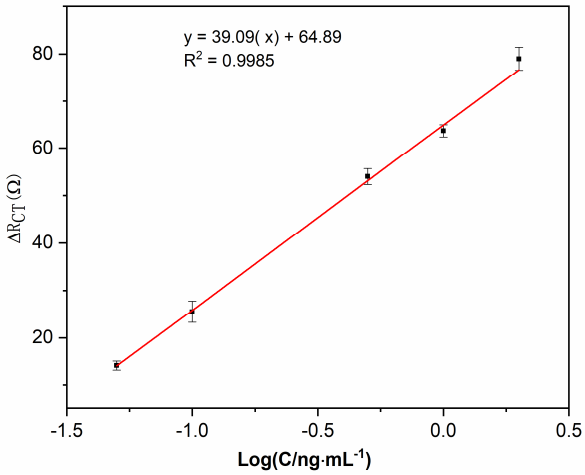

Figure S4 Calibration curve of detection of OTA in red wine based on ΔR_{CT} vs. log (OTA concentration)