*SI APPENDIX*

# Sensitive Identification of Microcystin-LR via a Reagent-Free and Reusable Electrochemical Biosensor Using a Methylene Blue-Labeled Aptamer

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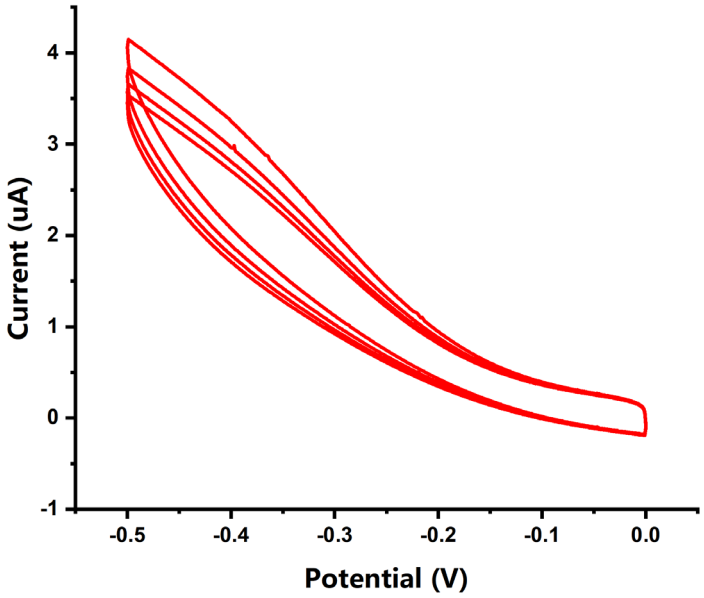



**Figure S1.** CVs of the bare Au sensor in 20 mM Tris-HCl buffer

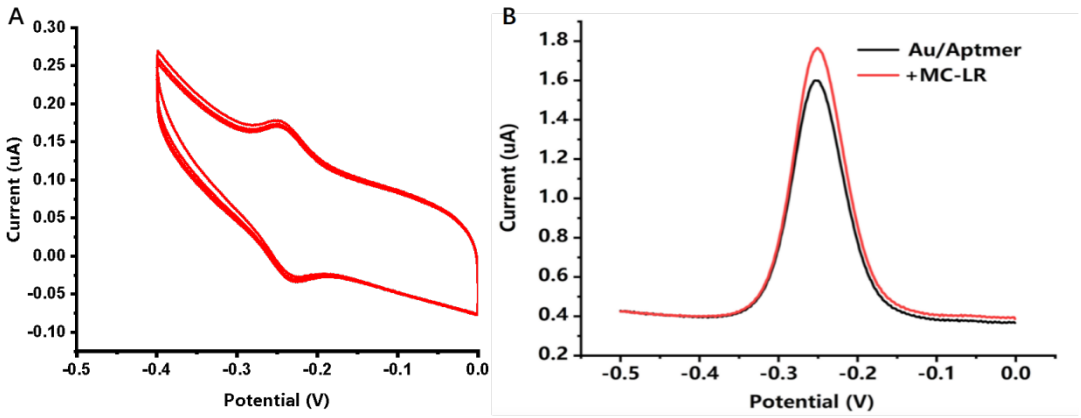



**Figure S2. (A)** CVs of the E-AB sensor in 20 mM Tris-HCl buffer; **(B) SWVs** of the E-AB sensor in Tris-HCl buffer (black line) and presence of MC-LR (red line).

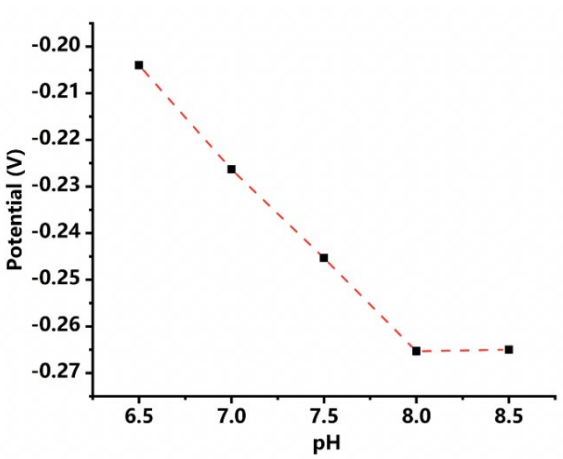



**Figure S3.** The potential moves with the increase of pH value.

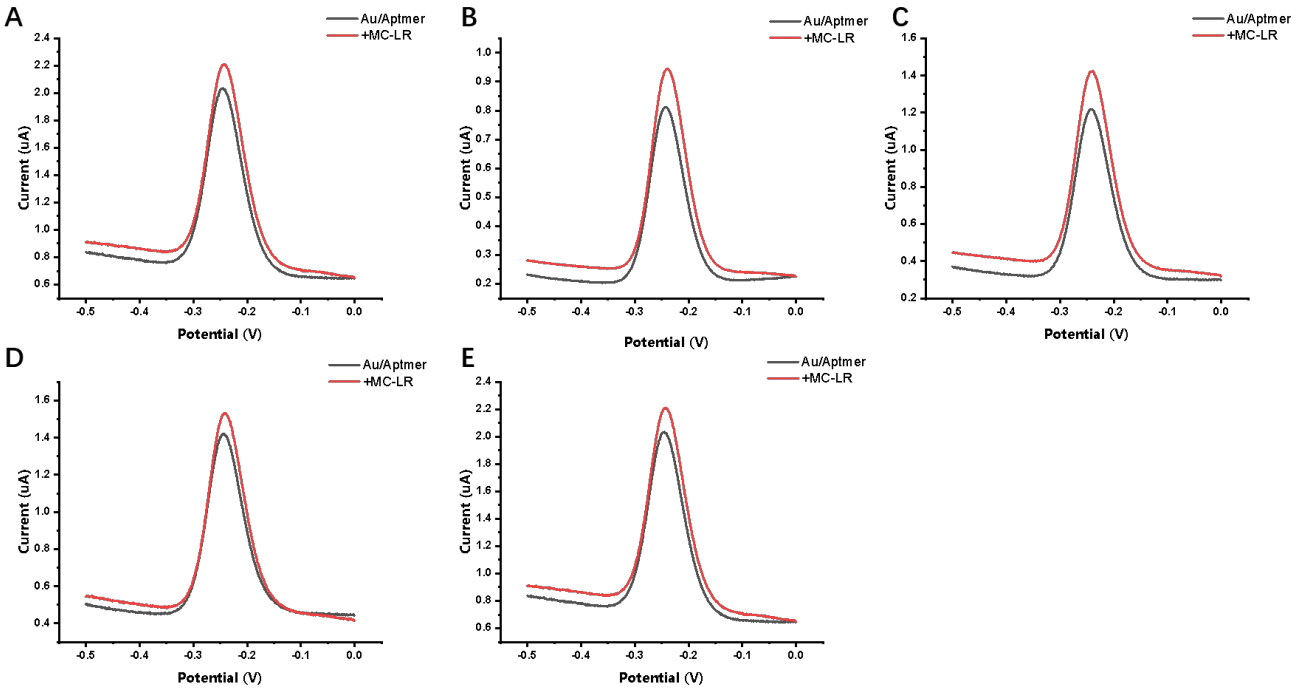



**Figure S4.** SWVs of the E-AB sensor in Tris-HCl buffer (black line) and presence of MC-LR (red line) with **(A)** 10 Hz; **(B)** 30 Hz; **(C)** 60 Hz; **(D)** 90 Hz; and **(E)** 120 Hz measurement frequency. All condition optimization is carried out with 100 ng/L MC-LR.