

Supporting Information

Non-invasive detection of interferon-Gamma in sweat using a wearable DNA hydrogel-based electrochemical sensor

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Table S1. Oligonucleotide sequences used in this work.

Oligonucleotides	Oligonucleotide Sequences (5'-3')
H1	AGTGGGTGTTGTGTTCACTCCA AATTCGCACCGGACACAACACCCA CT
H2	CCGGACAC AACACCCAAGATGTGTACC TGGGTGTTGTGTCCGGTG CGA ATT
L1	CAAGATGTGTACCTGGGTGTT
L2	CACCGGACAC AACACCCAGGTACACATCTTG GGTGTT
Trigger	TGGAGTGTGA ACACAACACCCA
Aptamer	TTTTTTTTTT GGGGTGTTGTGTTGGGTGTTGTGT
H1 _{Cy3}	AGTGGGTGTTGTGTTCACTCCA AATTCGCACCGGACACAACACCCA CT-Cy3
H2 _{BHQ2}	CCGGACAC AACACCCAAGATGTGTACC /BHQ2/ TGGGTGTTGTGTCCG GTG CGAATT
Sulfhydryl modified L1	CAAGATGTGTACCTGGGTGTT TTTTTTTTTTTTTT-SH
Ferrocene modified L2	FC-CACCGGACAC AACACCCAGGTACACATCTTG GGTGTT
Random	TTTTTTTTTT ACGAAACATGCAAACAAATTGTTCAA

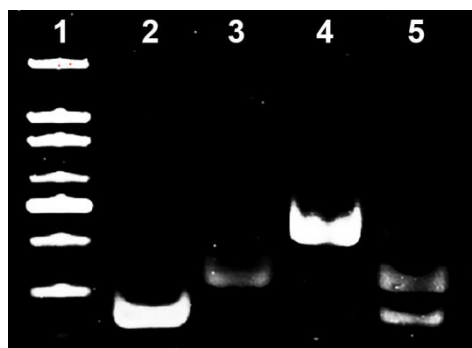


Figure S1. PAGE analysis of DNA ladder, Trigger, Aptamer and their mixture before and after addition with IFN- γ (lanes 1-5).

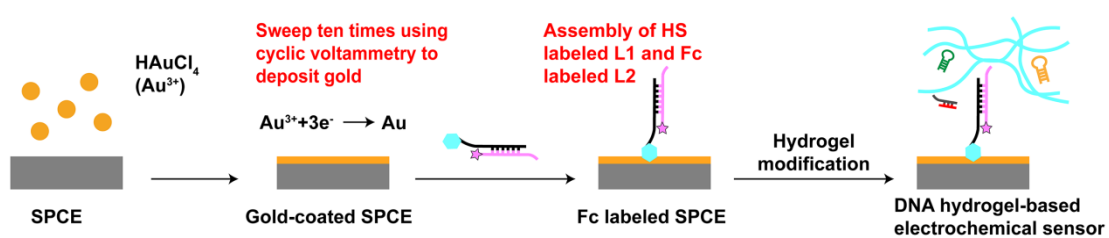


Figure S2. Schematic diagram of the sensor fabrication process.

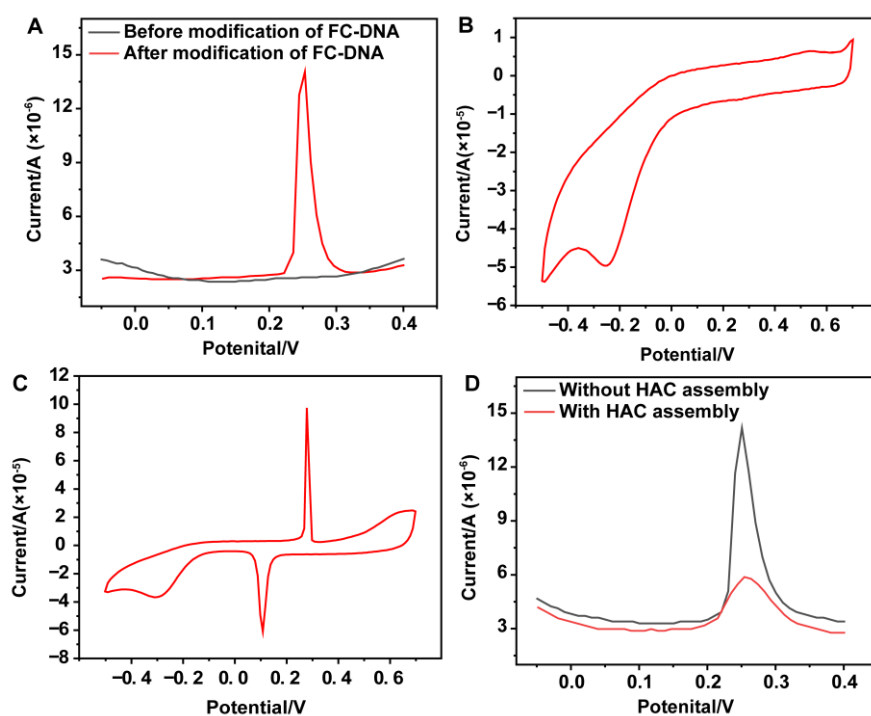


Figure S3. (A) DPV and (B) CV curves of the gold coated SPCE before and (C) after modification of FC labeled DNA stands. (D) DPV signals of L1-L2 hybridization before and after treatment with HAC.

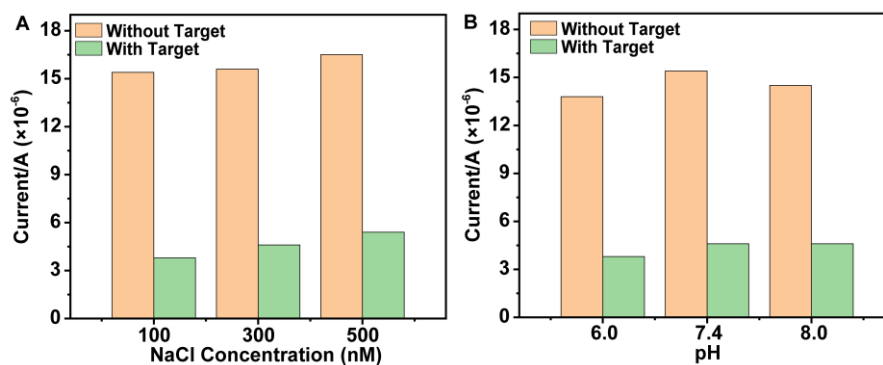


Figure S4. DPV signals before and after treatment with the target under different (A) pH or (B) buffer solution.

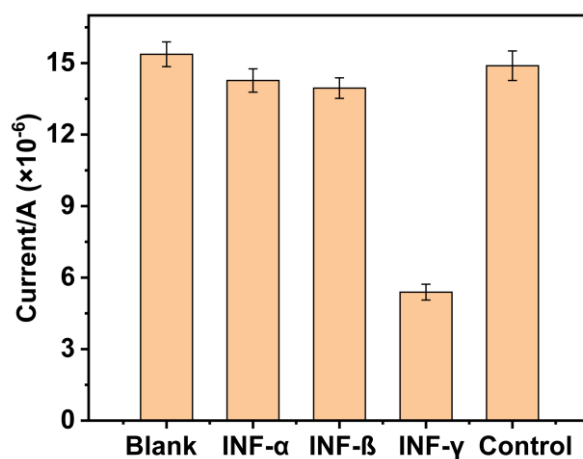


Figure S5. DPV signal value after treatment with IFN- α , IFN- β or IFN- γ , and DPV signal of control sensor synthesized with random sequences to substitute the aptamer strand after treatment with IFN- γ . Error bars indicate means \pm SD ($n = 3$).

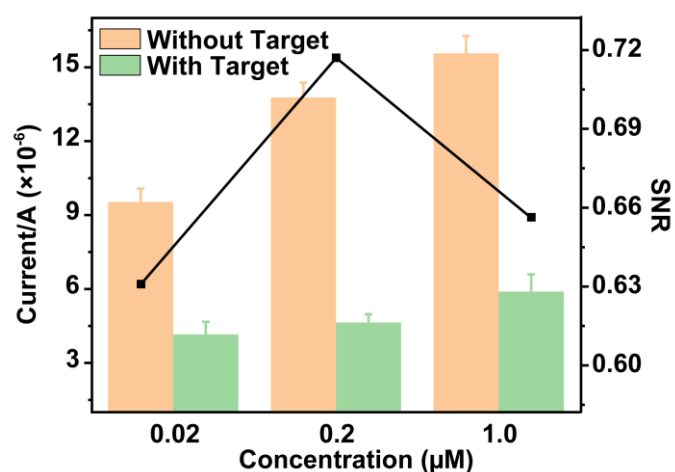


Figure S6. DPV signals of electrode modified with different concentrations of L2 before and after treatment with the target. Error bars indicate means \pm SD ($n = 3$).

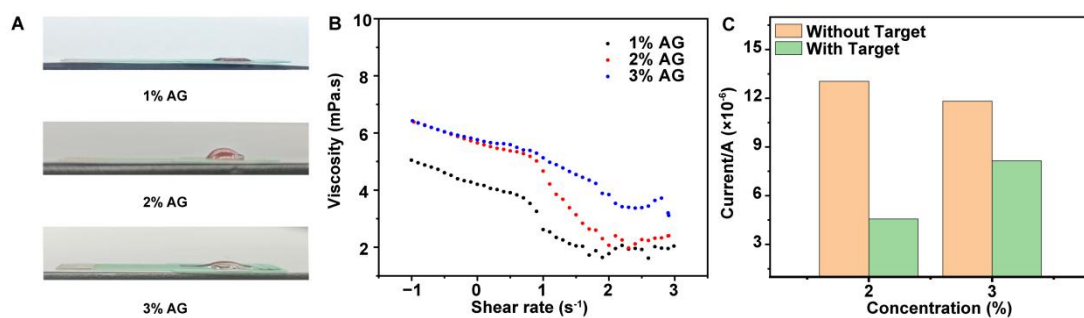


Figure S7. (A) Photos of agarose hydrogel at different concentrations on gold coated SPCE. (B) Viscosity as a function of shear rate of hydrogel samples with different concentrations. (C) DPV signals of electrode covered with different concentrations of agarose hydrogel before and after treatment with the target.

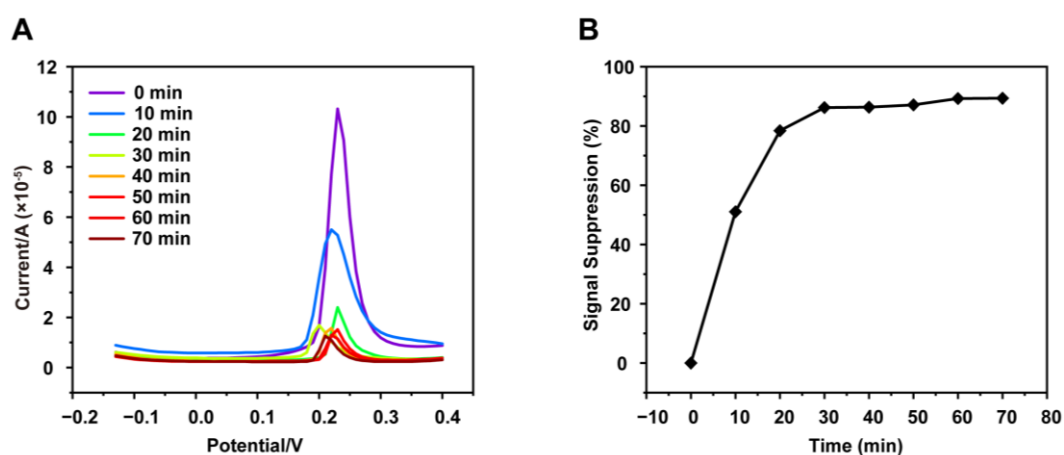


Figure S8. (A) DPV signals after treatment with the target for different times and the (B) corresponding signal suppression rate.

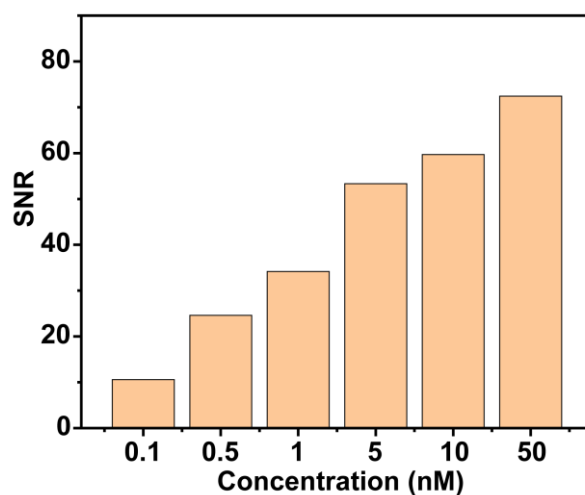


Figure S9. SNR of the samples after treatment with different concentrations of target.

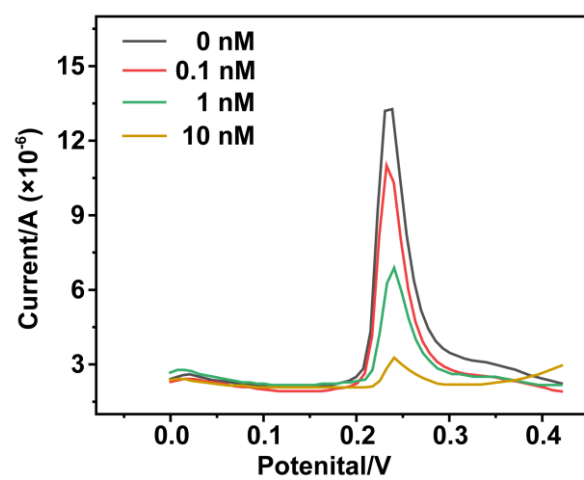


Figure S10. DPV signals after treatment with artificial sweat containing INF- γ with different concentrations.