

Cost-Effective Modular Biosensor for SARS-CoV-2 and Influenza A Detection

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Supporting Information

Table S1. Sequences of oligonucleotide used in the study.

Strand	Sequence (5'-3') ¹
USL	/ThiolMC6-D/TTTTTTTTTTCGCGTTAAACATACAATAGATCGCG
UMeB	MeBIN/CGGTACATTGTTGAG ²
SARS-S m-strand	TTGAGCAATC/iSp9/ TATGTTAACTTCTCAACAATGTACCG ³
SARS- S f-strand	GATCTATTG/iSp9/ ATTCATCTGTGAGCAAAGGTG ³
SARS- S	GTTTTGCCACCTTTGCTCACAGATGAAATGATTGCTCAATACACTTCTGCACTGTTAGCG
SARS_FP	AATTCTAATACGACTCACTATAGGGAGAAGGGCCTTGGTGATATTGCTGCTAGA
SARS-RP	CGCTAACAGTGCAGAAAGTGA
SARS-S NASBA Amplicon	GGGAGAAGGGCCUUGGUGAUUUGCUGCUAGAGACCUCUUUGUGCACAAAAGUUU- AAC- GGCCUUACUGUUUUGCCACCUUUGCUCACAGAUGAAAUGAUUGCUCAAUACACUUCUG CACUGUUAGCG
SARS- N m-strand	GCTGCCTGGAGTTGA/Isp9/TATGTTAACTTCTCAACAATGTACCG ³
SARS- N f-strand	GATCTATTG/Isp9/ATTTCTTGAAGTGTGCGACTA ³
SARS-N target	TAGTCGCAACAGTTCAAGAAATTCAACTCCAGGCAGCAGTAGGGGAAGTCTCCTGCTAG
InfA-M m-strand	T CTC GGC TTT /iSp9/ TATGTTAACTTCTCAACAATGTACCG ³
InfA-M f-strand	GATCTATTG/iSp9/ GAGGGGGCCTGATGG AAC ³
InfA -M target	TATGTTCTCTCTATCGTTCCATCAGGCCCCCTCAAAGCCGAGATCGCGCAGAGACTTGAA

¹ Fragments of strands complementary to another are colored the same and/or underlined. ²MeB: methylene blue. ³iSp9: triethylene glycol spacer.

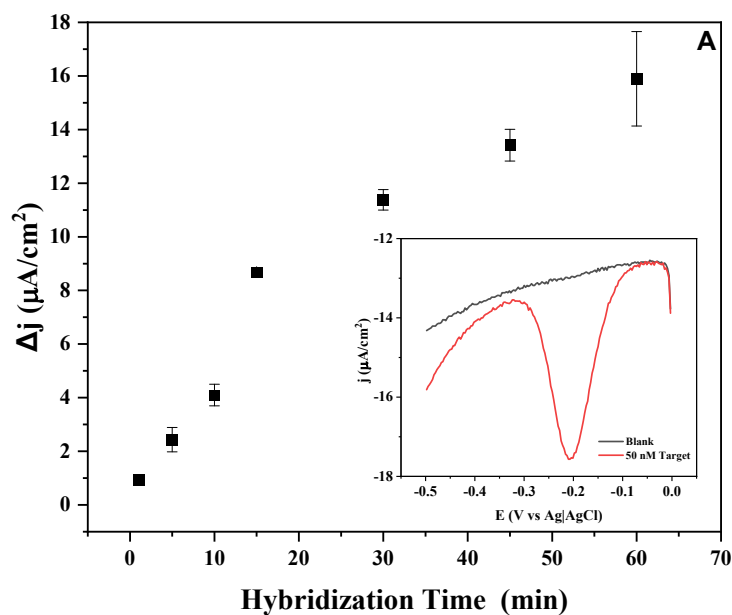


Figure S1. Response of the SARS-CoV-2 gene S sensor for a varied hybridization time (1, 5, 10, 15, 30, 45 and 60 minutes) using the SARS-S target (50 nM) on GDEs. Inset: SWV response before (black) and after (red) addition of the target with 10-min hybridization time.

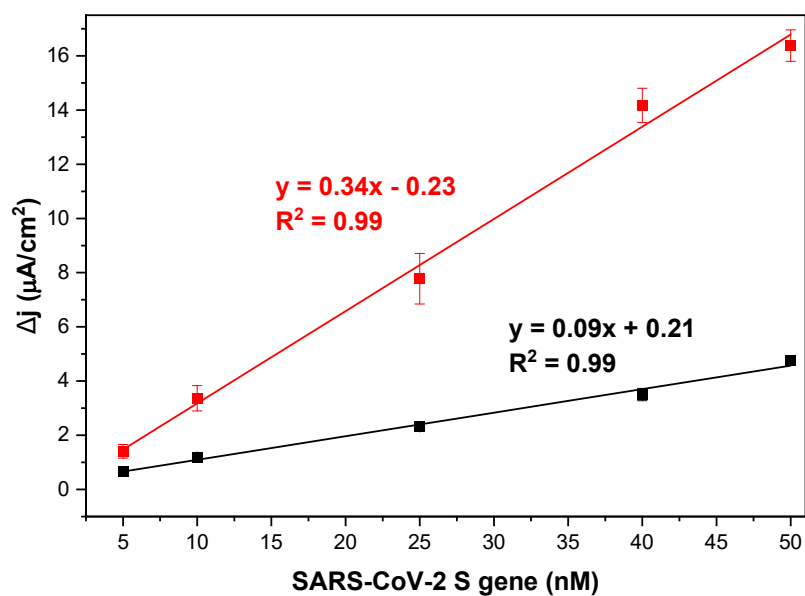


Figure S2. Calibration curves obtained for SARS-S-specific biosensor on SPGEs using varied concentrations (5, 10, 25, 40, and 50 nM) of the SARS-S target with 10 min (black dots) and 30 min (red dots) hybridization time.

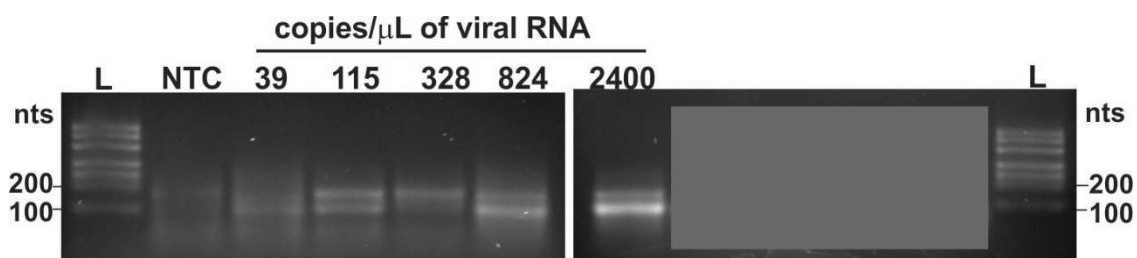


Figure S3. Analysis of NASBA amplicons in 2% agarose gel. Samples containing ~2400, 824, 328, 115 or 39 copies/ μ L of SARS-Cov-2 RNA were subjected to NASBA reaction for 90 min. L: ssRNA ladder (the bands corresponding to 100- and 200-nt RNA fragments are labeled); NTC: NASBA no-template control. A grey box in the right gel image masks other samples that were analyzed in the same gel but are irrelevant for the reported work.