**A Microfluidic-based Electrochemical Biochip for Label-free DNA Hybridization Analysis**

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Supplementary Data:

Figure S1:



Figure S1. Device mechanism and channels configuration. a) The PDMS channels are vertically aligned to expose columns of working electrodes to be functionalized with different ssDNA probes. b) After functionalization, the PDMS channels are lifted, rotated, and placed back down to align counter and reference electrodes within separate horizontal rows of working electrodes.

Figure S2:



Figure S2. a) SU-8 mold used for microfluidic assay channels. b) Photograph of the electrochemical arrayed chip.

Figure S3:



Figure S3. Flow diagram of the device performance. Solid arrows indicate solution flow. Dashed arrow indicates electrochemical information recording.

Figure S4:



Figure S4. Process flow for the surface functionalization and the sample testing.