Supporting Information for Publication

Aptamer based paper strip sensor for detecting *Vibrio fischeri*

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Supporting Information

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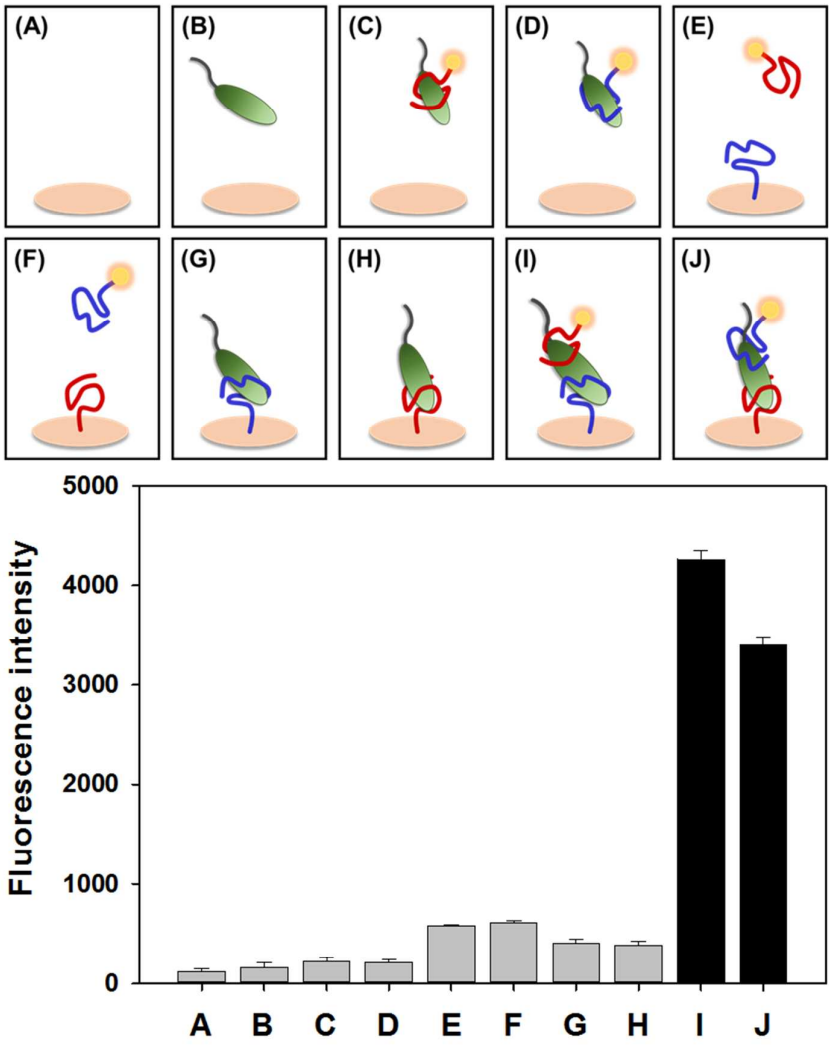
1. Figure SI 1



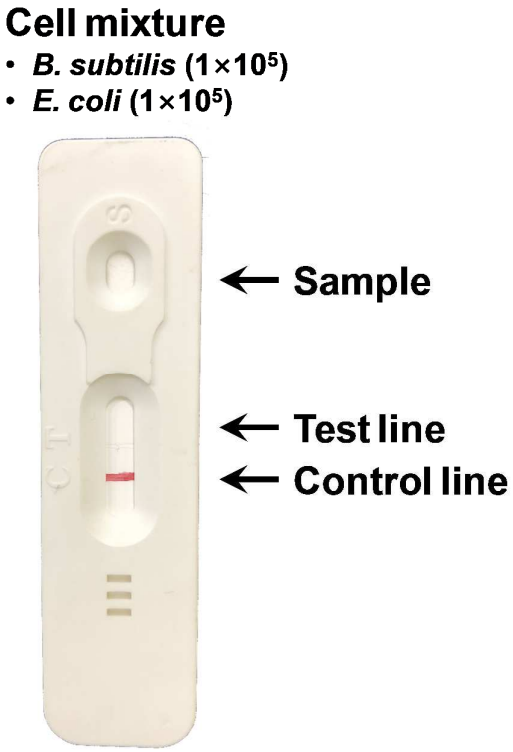
Fluorescent intensity from aptamer-based sandwich assay with controls (A) Signal of microtitier plate surface; (B) Signal with *V. fischeri* cells only; (C) Signal of VFCA-03 aptamer (red) with *V. fischeri*; (D) Signals of VFCA-02 aptamer (blue) with *V. fischeri*; (E) Signal with VFCA-03 aptamer (amine) and (Cy5) VFCA-02 aptamer; (F) Signal with VFCA-02 aptamer (amine) and VFCA-03 aptamer (Cy5); (G) Signal without VFCA-02 aptamer (Cy5) aptamer (red); (H) Signal without VFCA-03 aptamer (Cy5) aptamer (blue); (I) Signal with VFCA-03 aptamer (amine) – *V. fischeri* - VFCA-02 aptamer (Cy5) aptamer; (J) Signal with VFCA-02 aptamer (amine) – *V. fischeri* - VFCA-03aptamer (Cy5) aptamer.

1.1 Experimental method

Aptamer-based fluorescent biosensor assays were performed based on our previous study [1]. In briefly, assays were performed using 96 well microtiter plate with covalently-linked N-oxysuccinimide (NOS) esters that quickly react with primary amine groups (Corning Inc., Corning, NY). All aptamers were chemically synthesized (Bioneer, South Korea). Assay was prepared using the following procedure: (1) the 5' amine modified aptamer was coated with a concentration of 1 μM (100 pmol in 100 μL treatment volume) per single well NOS (N-oxysuccinimide) surface in a 96 microtitier plate for 1 h at RT. After immobilization, the NOS surfaces were washed 3 times with 0.1 % Tween-20 in TBS (TBST), after which 100 μL of blocking buffer (2 % BSA in sodium phosphate buffer). (2) For preparing the assay sample, 10^5 of *V. fischeri* cells were reacted with 1 μM of Cy5-labeled aptamer in binding buffer for 1 hour at 4°C with gentle shaking. 100 μL of each samples was added into the well and incubated with gentle shaking for 1 h at RT. The unbound cells were removed, and the plates were washed twice with TBST. (3) Following incubation, unbound Cy5 aptamers and cells were washed with TBST, and the absorbance was measured at 650 nm using a SpectraMax M2 multi-detection microplate reader (Molecular Devices) at excitation/emission wavelengths of 646/662 nm respectively.

1. Song, M.S.; Sekhon, S.S.; Shin, W.R.; Kim, H.C.; Min, J.; Ahn, J.Y.; Kim, Y.H.; Detecting and Discriminating *Shigella sonnei* Using an Aptamer-Based Fluorescent Biosensor Platform. *Molecules*. **2017**; doi: 10.3390/molecules22050825.

2. Figure SI 2



Both negative selection cells (*B.subtilis* and *E.coli*) were tested using aptamer-based paper strip sensor. Both did not react to *V. fischeri* aptamer based sandwich formed paper strip sensor.