Electronic Supplementary Material (ESI) for Analyst.
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Supplementary information

Retroreflection-based sandwich type affinity sensing of isothermal gene amplification product for foodborne pathogen detection

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Figure S1. Outline of the LAMP reaction. (A) The general amplification process producing concatemers of various sizes and shapes. (B) The amplification process generating double-stranded detectable amplicon using specially designed primers.

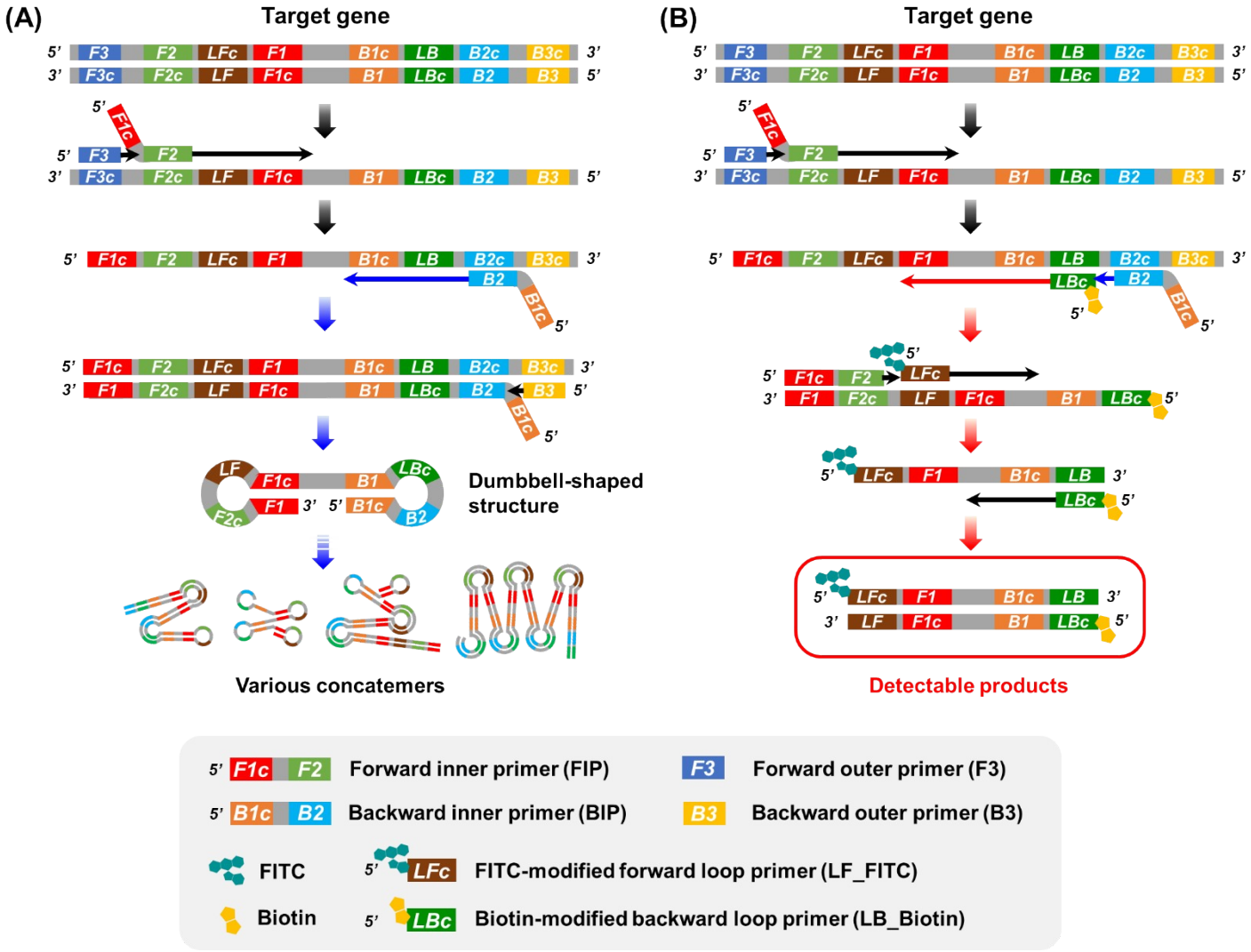

Figure S2. Confirmation of streptavidin conjugation of the RJPs for target-specific detection. The image on the left shows the result of SA-RJP and the image on the right shows the result of EA-RJP.

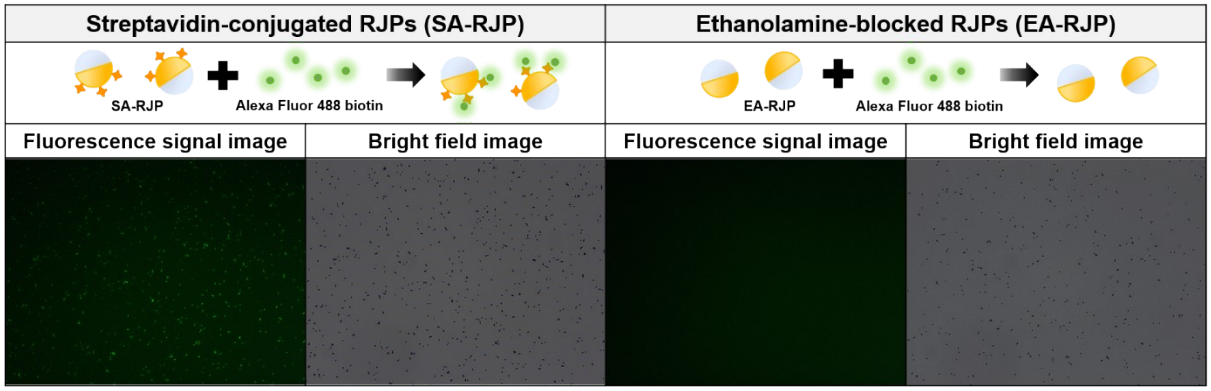

Figure S3. Confirmation of the possibility of quantitative analysis of target amplicons. (A) Workflow of the detection procedure of the double-stranded target amplicons using SAPE and anti-FITC antibody-modified sensing surface. (B) The result images of the sensing surface after the assay observed with fluorescence microscopy. (C) The graph represents the quantification of the fluorescence intensity in the resulting image using the ImageJ software program.

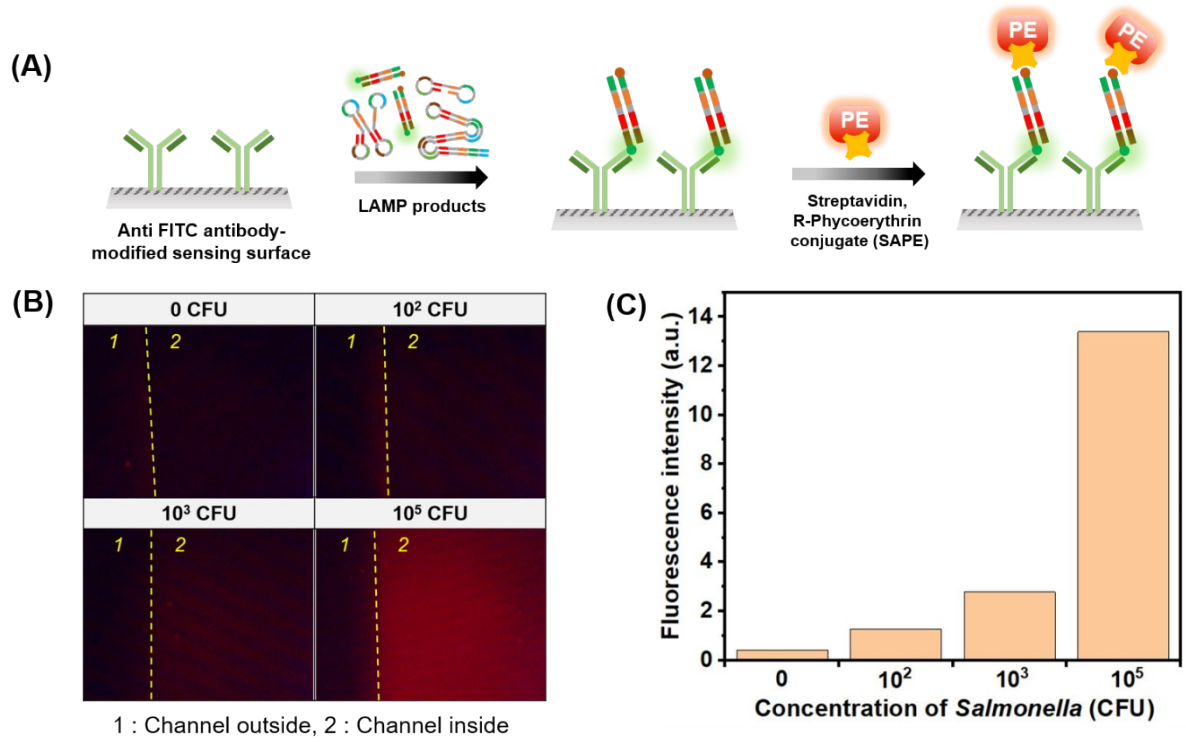

Table S1. Comparison of analytical performances for detection of *Salmonella*.

Methods	Detection limit (CFU/mL)	Linear Range (CFU/mL)	References
ELISA	10^4	10^4-10^8	[1]
SPR	60	10^2-10^7	[2]
SERS	35	10^2-10^7	[3]
Fluorescent	5×10^3	5×10^4-1×10^7	[4]
Fluorescent	6	10^2-10^6	[5]
Colorimetric	10^5	10^6-10^8	[6]
Colorimetric	14	10-10^7	[7]
Electrochemical	8	9.6-9.6×10^4	[8]
Magnetic relaxation	20	10^3-10^7	[9]
PCR	2-3	10-10^5	[10]
HDA	10^2	NA	[11]
RPA	10^2	NA	[12]
LAMP	10^2	10^2-10^7	[13]
LAMP	10	10-10^6	This biosensor

ELISA: enzyme-linked immunosorbent assay, SPR: surface plasmon resonance, SERS: surface-enhanced Raman scattering, PCR: polymerase chain reaction, HDA: helicase-dependent amplification, RPA: recombinase polymerase amplification, LAMP: loop-mediated isothermal amplification

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