Electronic Supplementary Information

Aptasensor based on fluorescence resonance energy transfer for multiplexed pathogenic bacteria determination

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Table S1 Simultaneous determination results for *V. parahaemolyticus*, *S. aureus* and *S. typhimurium*.

Bacteria	Linear equation	R	Linear range (cfu/mL)	LOD (cfu/mL)	RSD (n=7)
V. parahaemolyticus	Y=312.53x–318.8	0.9975	10^2-10^6	25	4.3%
S. aureus	Y=271.44x–342.08	0.9990	10^2-10^6	50	4.7%
S. typhimurium	Y=150.35x–256.16	0.9973	10^2-10^6	50	4.9%

Table S2 Quantification of *V. parahaemolyticus*, *S. aureus* and *S. typhimurium* cells in spiked milk and salmon samples by the proposed method.

Sample	Spiked concentration by counting method (cfu/mL)			Measured concentration by developed method (cfu/mL) (mean ± SD)		
	V. parahae-molyticus	*S. aureus*	*S. typhimurium*	*V. parahae-molyticus*	*S. aureus*	*S. typhimurium*
Milk 1	1.0×10^3	1.0×10^3	1.0×10^3	$(1.0\pm0.02)\times10^3$	$(1.0\pm0.21)\times10^3$	$(1.0\pm0.18)\times10^3$
Milk 2	1.0×10^4	1.0×10^4	1.0×10^4	$(0.9\pm0.13)\times10^4$	$(1.0\pm0.15)\times10^4$	$(1.0\pm0.17)\times10^4$
Milk 3	1.0×10^5	1.0×10^5	1.0×10^5	$(0.9\pm0.11)\times10^5$	$(1.0\pm0.17)\times10^5$	$(0.9\pm0.16)\times10^5$
Salmon 1	1.0×10^3	1.0×10^3	1.0×10^3	$(1.2\pm0.17)\times10^3$	$(0.9\pm0.15)\times10^3$	$(1.1\pm0.15)\times10^3$
Salmon 2	1.0×10^4	1.0×10^4	1.0×10^4	$(1.1\pm0.09)\times10^4$	$(1.0\pm0.13)\times10^4$	$(1.2\pm0.08)\times10^4$
Salmon 3	1.0×10^5	1.0×10^5	1.0×10^5	$(1.2\pm1.13)\times10^5$	$(1.0\pm0.10)\times10^5$	$(1.0\pm0.20)\times10^5$

SD: standard deviation (n=7)

Table S3. Summary of LOD for bacteria detection with various method reported by previous papers

Method	LOD		Ref
Fluorescence spectra	Escherichia coli	10^3-10^4 cfu/mL	1
	Salmonella		
	Campylobacter		
a multi-channel SPR sensor	*E. coli*	1.4×10^4 cfu/mL	2
	S. choleraesuis	4.4×10^4cfu/mL	
	C. jejuni	1.1×10^5cfu/mL	
	L. monocytogenes	3.5×10^3cfu/mL	
high-throughput suspension array technology	*E. coli* O157:H7, *Shigella*, *S. aureus*, and *Listeria*	1 cfu/mL	3
	Salmonella and *V. parahaemolyticus*	10 cfu/mL	
electrochemical immunosensor arrays	*E. sakazakii*	4.57×10^3cfu/mL	4
	E. coli O157:H7	3.27×10^3cfu/mL	
Fluorescent nanocrystals based-flow-cytometry	*B. anthracis*	10^3 cfu/mL	5
	Y. pestis		
HRP-amplification-based DNA microarray sensor	*Bacillus anthracis*,	0.75 pM	6
	Yersinia pestis		
	Escherichia coli		
	Bacillus subtilis		
Microscale impedance based metabolic activity detection-based methodology	*L. innocua*	100 cfu/mL	7
	L. monocytogenes	200 cfu/mL	
	E. coli	40 cfu/mL	
Fluorescence bioassay	*S. typhimurium*	5 cfu/mL	8
	S. aureus	8 cfu/mL	
multicolor upconversion nanoparticles labels	*S. aureus*	25 cfu/mL	9
	V. parahaemolyticus	10 cfu/mL	
	S. typhimurium	15 cfu/mL	
Aptasensor based on FRET	*V. parahaemolyticus*	25 cfu/mL	Our method
	S. aureus	50 cfu/mL	
	S. typhimurium	50 cfu/mL	

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