

Supplementary Materials:

A Portable Impedance Immunosensing System for Rapid Detection of *Salmonella Typhimurium*

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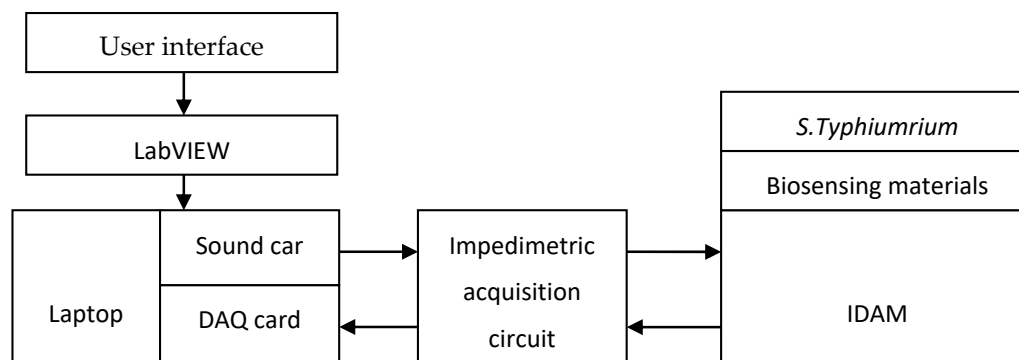
Table S1. Bacteria culture used in the study.

Deposited Name	Designation	Antigenic Properties	ATCC
<i>Salmonella typhimurium</i> (Loeffler) Castellani and Chalmers	CDC 651660	I 4,5,12:i:1,2 (Determined by depositor)	14028
<i>Listeria monocytogenes</i> (Murray et al.) Pirie	1778+ H 2b [KC 1778+ H 2b, KC 1818]	—	43251
<i>Escherichia coli</i> (Migula) Castellani and Chalmers	K12	—	29425
<i>Escherichia coli</i> (Migula) Castellani and Chalmers	CDC B6914MS1	Serotype O157:H7	43888
<i>Listeria innocua</i> Seeliger	SLCC 3379 [58/1971, NCTC 11288]	Serotype 6a	33090

Table S2. Simulated value of C_{dl} , R_{et} , and R_s in the equivalent circuit for the negative control and the sample of 2.5×10^3 CFU ($50 \mu\text{l}$)⁻¹ of *S. Typhimurium* and their relative changes percentage with respects to the values of the negative control.

Samples	C_{dl} (nF)	R_{et} (k Ω)	R_s (Ω)
Negative control	1.87 ± 0.18	15.08 ± 0.23	782 ± 53.03
<i>S. Typhimurium</i>	2.11 ± 0.35	20.45 ± 0.39	921 ± 81.24
Change (%)	12.83	35.61	17.77

C_{dl} : the double layer capacitance at each electrode; R_{et} : the electron-transfer resistance; R_s : the resistance in medium.



Scheme S1. A scheme of the portable impedance immunosensing system.

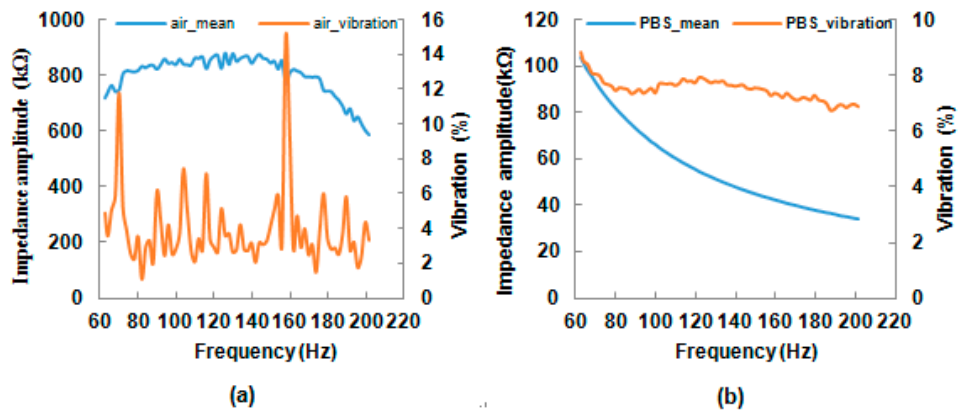


Figure S2. Evaluation of the portable impedance immunosensing system using the IDAM sensor under (a) air condition, and (b) PBS buffer solution.