1 **Supporting Information.**

2 Conductive thread-based immunosensor for

3 pandemic influenza A (H1N1) virus detection

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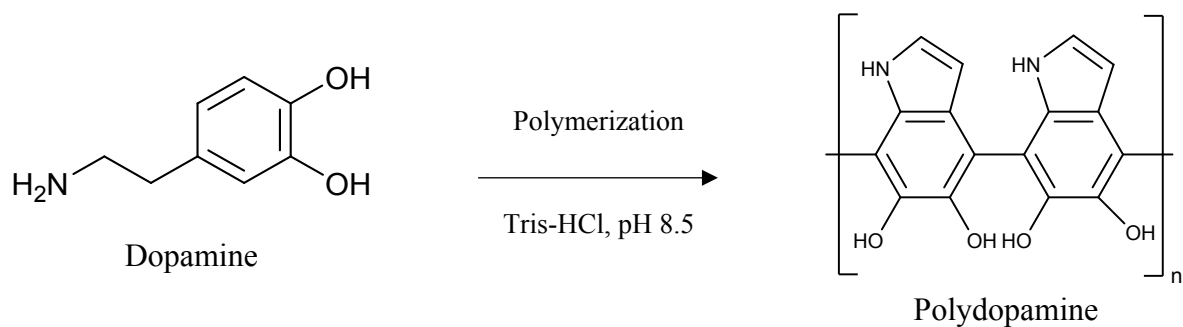18 (KIMM), Daejeon 34103, Republic of Korea

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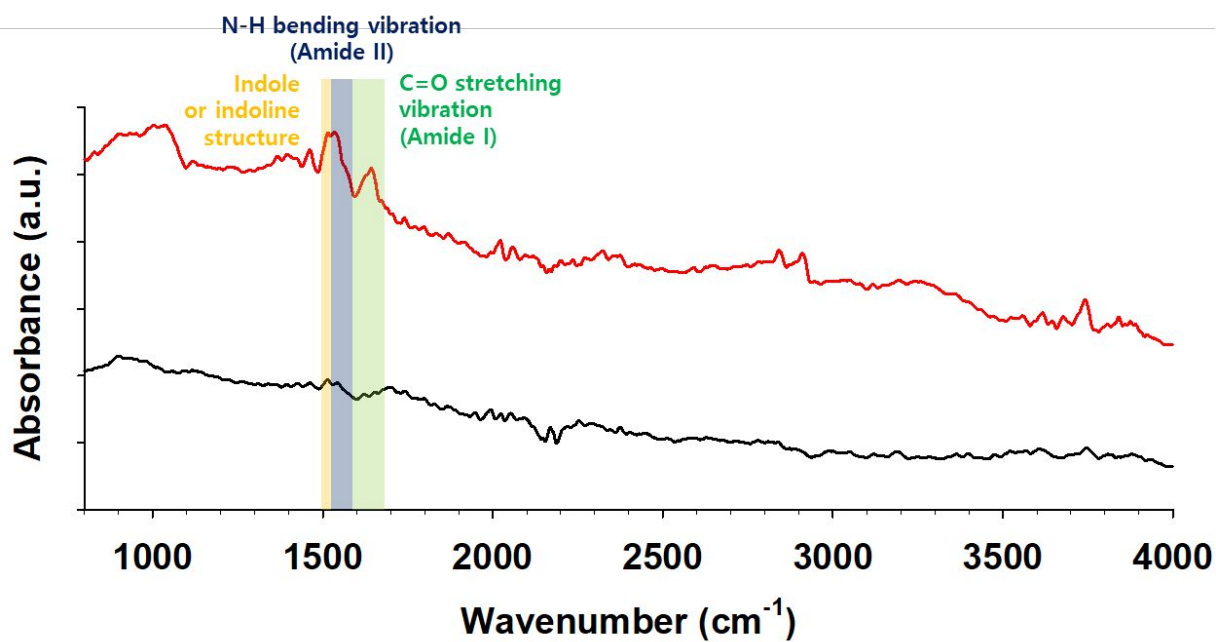
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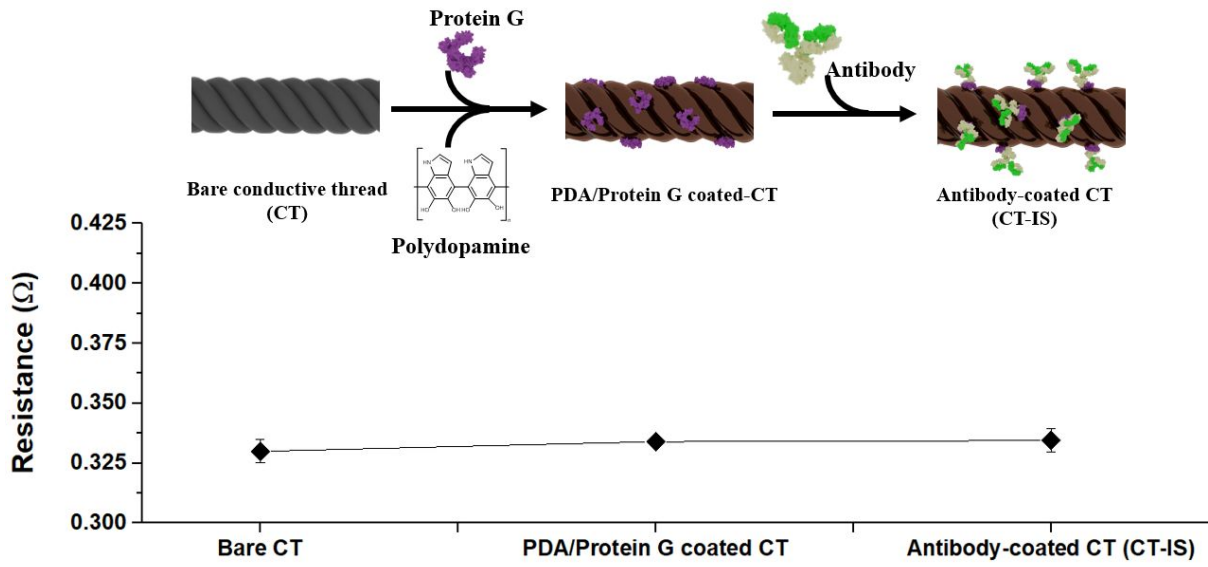8　**Figure S1.** Polymerization of dopamine to polydopamine.
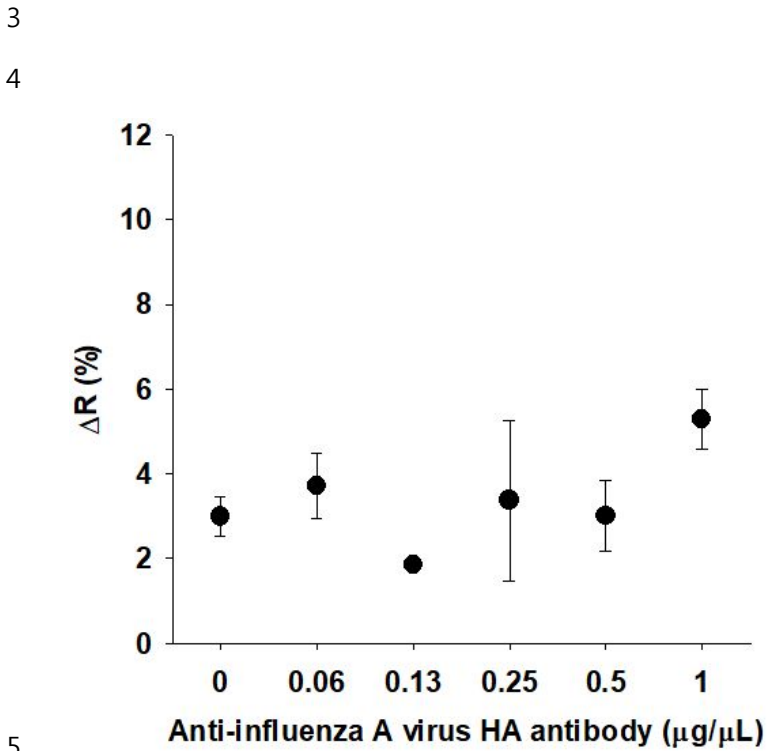
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1   **Figure S2.** FT-IR spectra of bare conductive thread (CT) (black) and CT-IS (red).

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2   **Figure S3**. Resistance changes at each stage of CT-IS fabrication.

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6   **Figure S4**. Resistance change in the CT-IS, based on anti-influenza A virus HA antibody

7   concentration. Error bars represent the standard deviation of the three determinations.

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Handheld digital multimeter

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3   **Figure S5**. Set-up image of CT-IS using digital multimeter.

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Table S1. Comparison of different pH1N1 virus detection platforms.

Name	Detection method	Advantage	Disadvantage	Refs
Immunodiagnostics				
PEP-PDA nanosensor	Colorimetric	Visual assay (Naked eye detection)	The external environment (lighting, brightness) affects the result reading.	(48)
EIS aptasensor	Electrochemical impedance	High sensitivity	Sophisticated device is required for signal detection.	(49)
FET biosensor	Electrical	High sensitivity and specificity	Sophisticated device is required for signal detection.	(50)
FRET combined with DNase I	Fluorescence	Good reproducibility and stability	Controlled temperature is required for enzyme reaction.	(51)
Our system (CT-IS)	Electric piezoresistance	Low cost, lightweight, easy-to-use	Portable device is required for signal detection.	.
Molecular diagnostics				
Nested PCR	Fluorescence	Low cost	Pre-treatment (e.g., DNA/RNA extraction) and sophisticated device are required.	(52)
Pyrosequencing	Luminescence	High accuracy and specificity	Pre-treatment (e.g., DNA/RNA extraction) and high-cost device are required.	(53)