Supporting Information

An Automated Detection of Influenza Virus based on 3-D Magnetophoretic Separation and Magnetic Label

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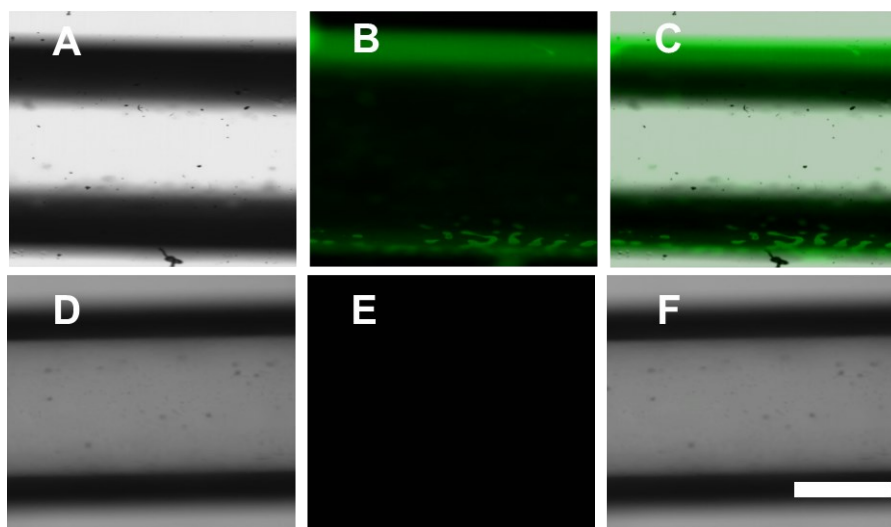
S.1 Microscopic images of glass capillary

Figure S1. (A-C) Microscopic images of antibody modified glass capillary (bright field, fluorescence field, and merge, respectively). (D-F) Microscopic images of magnetic beads without antibody modification. The scale bar is 100 μm.

S.2 Calculation of separation efficiency

The calculation of separation efficiency was taken Uv-Vis absorption quantitation. The absorbance at 600 nm was proportional to its concentration of magnetic beads, thus the separation effectiveness could be calculated by the equation:

$$\varphi_e = (1 - A_2/A_1) \times 100\%$$

Where φ_e is the separation efficiency, A_2 is the absorbance of solution at 600 nm after 3-D magnetophoretic separation, and A_1 is the absorbance of the original solutions at 600 nm.

S3 Specificity Analysis

To investigate whether there is a statistically significant difference, p analysis was

further calculated, and the results were shown in figure S2 with a significant difference.
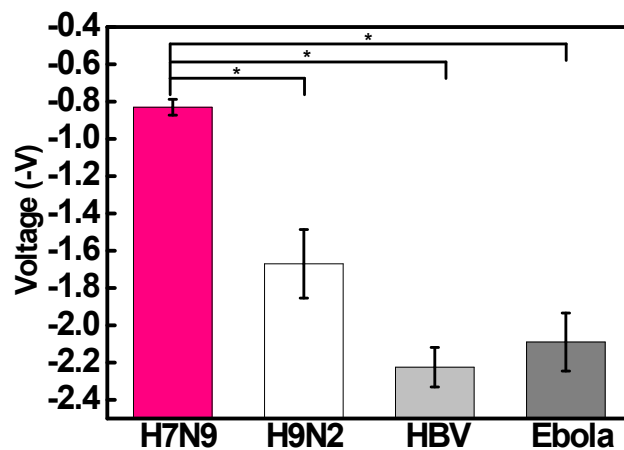
*means p < 0.05.

Figure S2. Histograms of the results of the specificity using this method. Error bars = ±SD, and n = 3.

Table S1. Intra- and Interassay Variability of This Method.

Table.S1 Intra- and Interassay Variability of This Method.

	Mean	SD	CV (n=5)
Intra-assay	-0.83	-0.044	5.3 %
Interassay	-0.91	-0.068	7.5 %