Electronic Supplementary Material (ESI) for Analyst
This journal is © The Royal Society of Chemistry 2011

*Supplementary Information*
*for*

# Semi-real time electrochemical monitoring for influenza virus RNA by reverse transcription loop-mediated isothermal amplification using USB powered portable potentiostat

*Naoki Nagatani,[a*] Keiichiro Yamanaka,[b] Masato Saito,[b] Ritsuko Koketsu,[c] Tadahiro Sasaki,[c] Kazuyoshi Ikuta,[c] Toshiro Miyahara[a] and Eiichi Tamiya[b]*

[a] Department of Applied Chemistry, Graduate School of Engineering, Okayama University of Science, 1-1, Ridai-cho, Kita-ku, Okayama-shi 700-0005, Japan.
[b] Department of Applied Physics, Graduate School of Engineering, Osaka University, 2-1, Yamadaoka, Suita-shi, Osaka 565-0871, Japan.
[c] Department of Virology, Research Institute for Microbial Diseases (BIKEN), Osaka University, 2-1, Yamadaoka, Suita-shi, Osaka 565-0871, Japan.

*Corresponding author: nagatani@dac.ous.ac.jp

The stability of screen-printed electrode as electrochemical sensors was investigated by cyclic voltammetry (CV) from − 0.8 to 0.8 V (scan rate; 0.10 V/s) of the test solution containing 10 mM $K_3[Fe(CN)_6]$ in 100mM $KNO_3$ solution at 63 °C. The screen-printed electrode was inserted into 200 µL micro tube with 50µL of test solution. In addition, to prevent vaporization, 20 µL of mineral oil was placed on the test solution. The micro tube inserting the electrode was incubated at 63 °C and CV measurements were carried out at 5 min and 40 min by using USB powered potentiostat. Three measurements were performed for evaluating characteristic error of screen-printed electrode using three different screen-printed electrodes (Fig. S1).

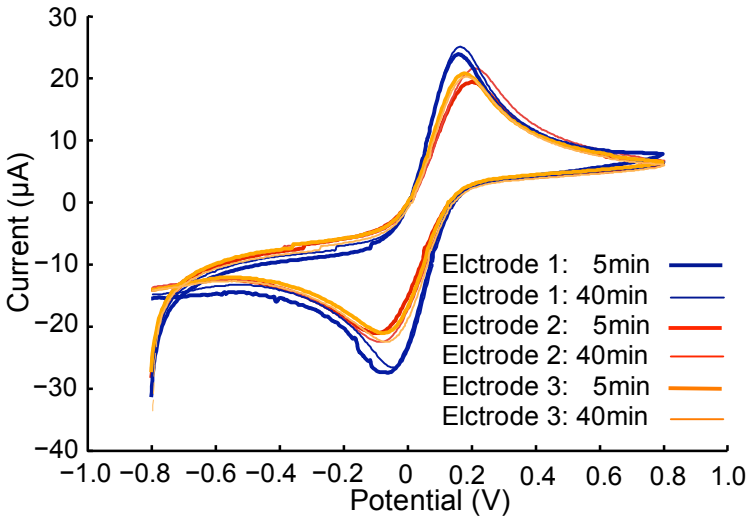


**Fig. S1** Cyclic voltammograms of 10 mM $K_3[Fe(CN)_6]$ at a scan rate of 0.1V/s in 100 mM $KNO_3$ solution at 63 using the screen-printed electrodes.

This journal is © The Royal Society of Chemistry 2011

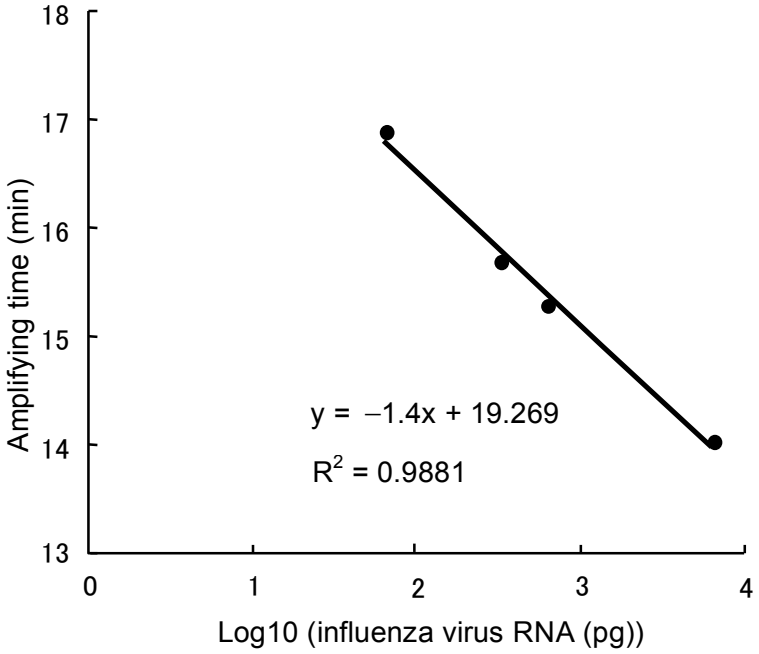


**Fig. S2** When the threshold ratio is taken as 0.8, the ratios for 63.6 pg/μL, 318 pg/μL, 636 pg/μL and 6.36 ng/μL of Positive Control H1P begin to cross with the threshold ratio at 16.9, 15.7, 15.3 and 14.1 min, respectively. Standard curve calculated. Threshold reaction times are plotted against the log10 of input influenza RNA. The linear regression line, and the equation and $R^2$ are all shown.