Supporting Information

SERS-based dual-mode DNA aptasensors for rapid classification of SARS-CoV-2 and influenza A/H1N1 infection

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Au Nanopopcorn → Functionalization → Au Nanopopcorn

4-MBA & MCH → Blocking

Capture sequence I

Sensible reporter I (Cy3)

Internal standard reporter (4-MBA)

SARS-CoV-2 Aptamer for Spike protein

Capture sequence II

Sensible reporter II (RRX)

Influenza A H1N1 Aptamer for Hemagglutinin
Fig. S2. Evaluation of the substrate-to-substrate reproducibility using the internal standard 4-MBA. (a) Photographs of six gold nanopopcorn aptasensors for the duplex assays. (b) Average Raman spectra obtained from all 36-point pixels in six pieces of aptasensors. (c) Corresponding histograms for the normalized Raman peak intensity ratios ($I_{1470}/I_{1075}$, blue and $I_{1650}/I_{1075}$, red) for six substrates. The relative standard deviations (RSDs) for the six aptasensors (1-6) is 2.1% ($I_{1470}/I_{1075}$) and 1.7% ($I_{1650}/I_{1075}$), respectively.
Fig. S4. Average Raman spectra of blank, SARS-CoV-2 (200 PFU/mL), influenza A/H3N2 (1000 HAU/mL), influenza A/H1N1 (80 HAU/mL), and influenza B (500 HAU/mL) for the specificity test of the dual-mode SERS-based aptasensor.