Electronic Supplementary Material

How to improve sensitivity of sandwich lateral flow immunoassay for corpuscular antigens on the example of potato virus Y?

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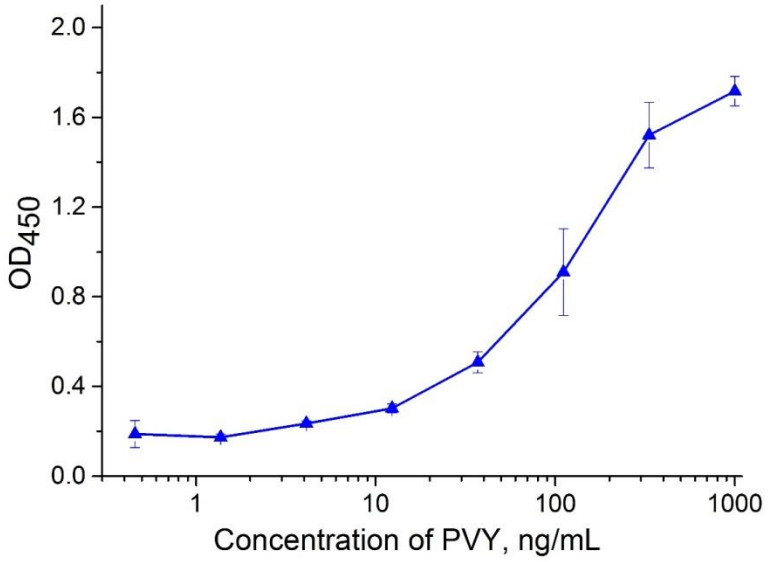


Figure S1 Calibration curve for ELISA for the detection of PVY^{O} in extracts of healthy potatoes.

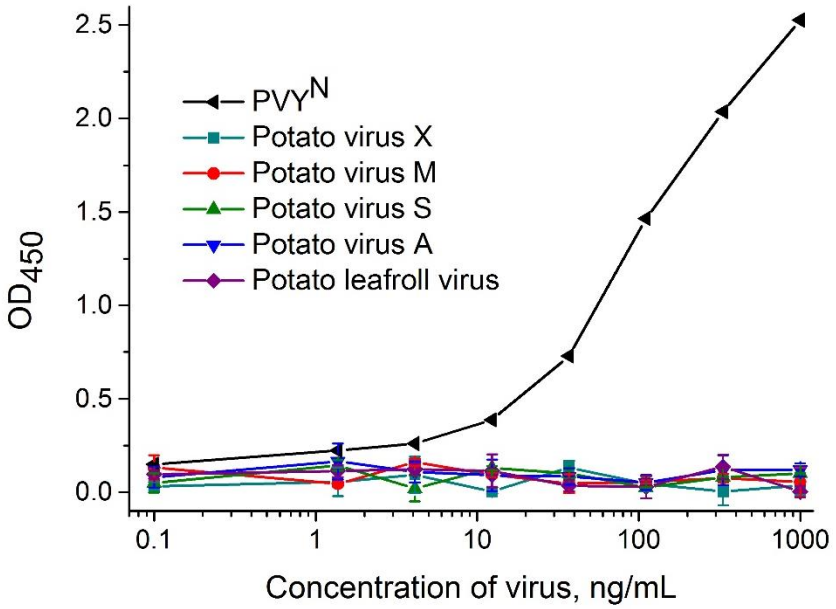


Figure S2 Calibration curve for ELISA for the detection of PVY^{O} and potato virus X, M, S, A, and potato leafroll virus.

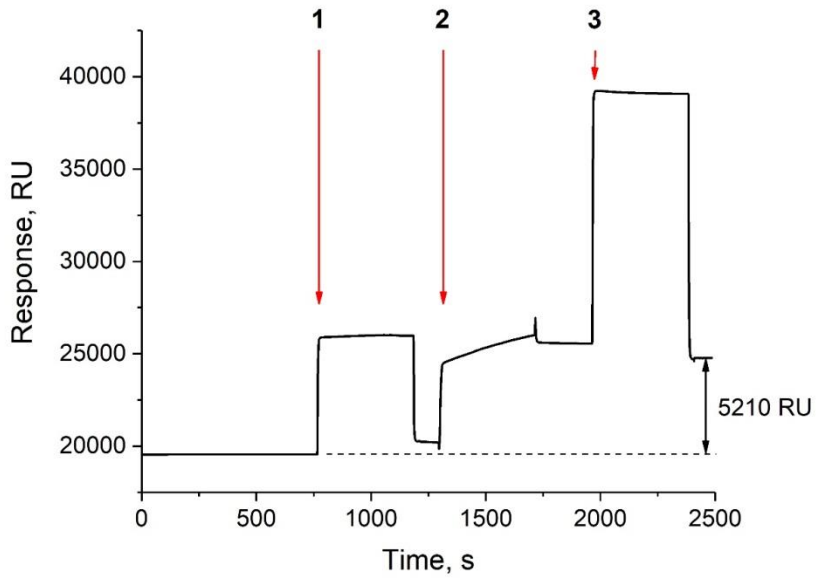


Figure S3. Sensogram of the covalent immobilization of the antibodies specific to PVY^{O} on a CM5 chip, where 1 indicates the injection of EDC and NHS, 2 indicates the injection of the antibodies, and 3 indicates the injection of ethanolamine.

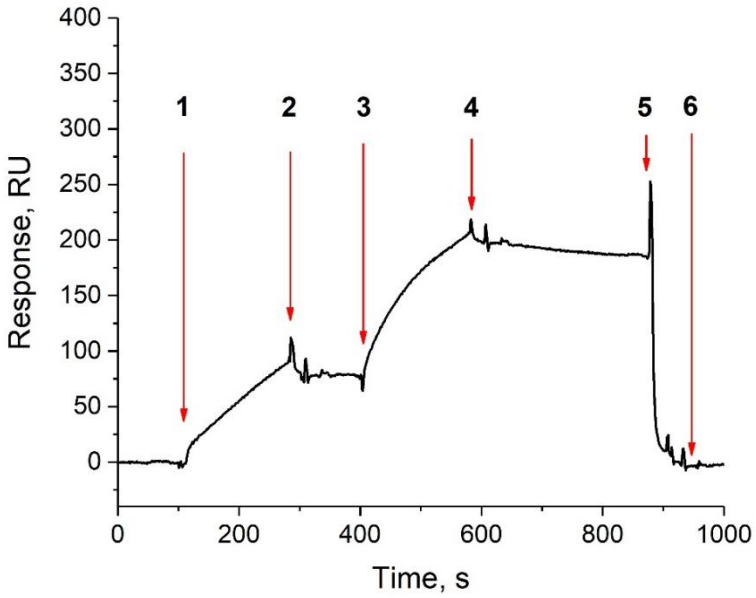
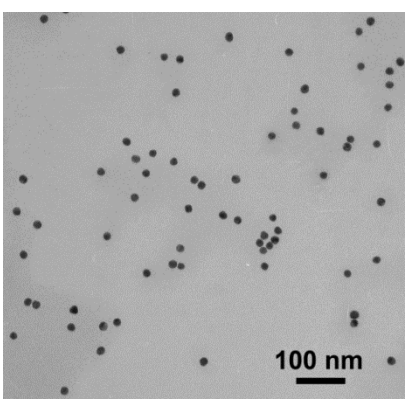
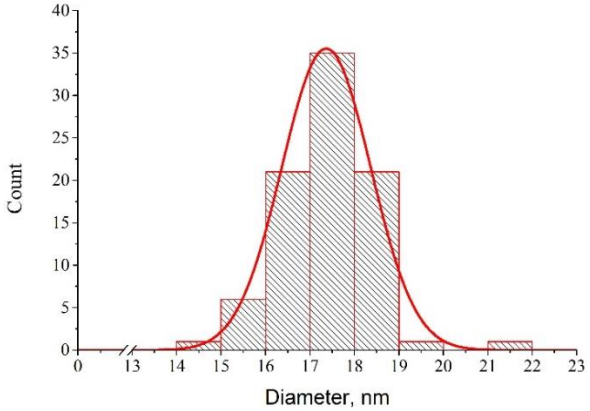


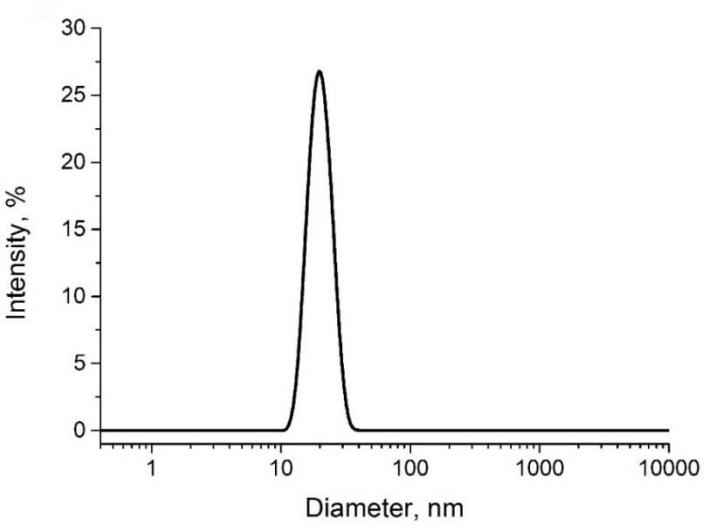
Figure S4. Sensogram of a typical cycle for an SPR experiment on a CM5 chip with covalently immobilized antibodies, where 1 indicates the injection of PVY^N at a constant concentration, 2 indicates the injection of the working buffer, 3 indicates the injection of specific (to PVY^N or PVY^O) antibodies (stage for determination of k_a), 4 indicates the injection of the working buffer (the stage of dissociation of the complex covalently immobilized antibody–PVY^N–antibody, determination of k_d), 5 indicates the injection of the buffer for destruction of the immune complex and surface regeneration up to covalently immobilized antibodies, and 6 indicates the injection of the working buffer.



(**a**)



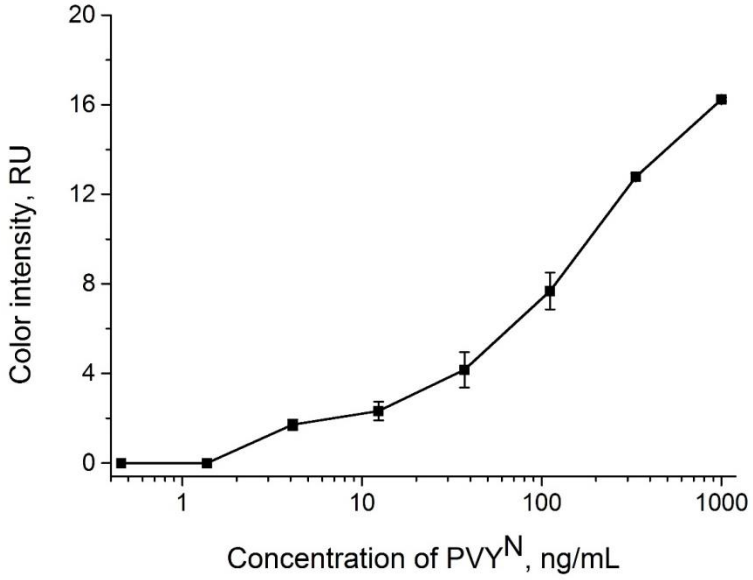
(**b**)



(**c**)

Figure S5. TEM image of GNPs (**a**) and size distribution histogram (**b**). DLS graph of the synthesized GNPs (**c**).

(**a**)



(**b**)

Figure S6. LFIA using PVY^N–spiked plant extract, test strips with sample pad. (**a**) Test strip after analysis, test strip 1 is the negative control (0 ng mL^{-1}) and test strips 2-10, PVY^N–spiked plant extract concentrations: 0.15, 0.46, 1, 4, 12, 37, 111, 333, 1000 ng mL^{-1}, respectively. (**b**) Dependence of the color intensity of the test zone on the virus concentration.