Supporting Information

High sensitivity prostate-specific antigen SERS detection platform based on laser resonance nanoparticles

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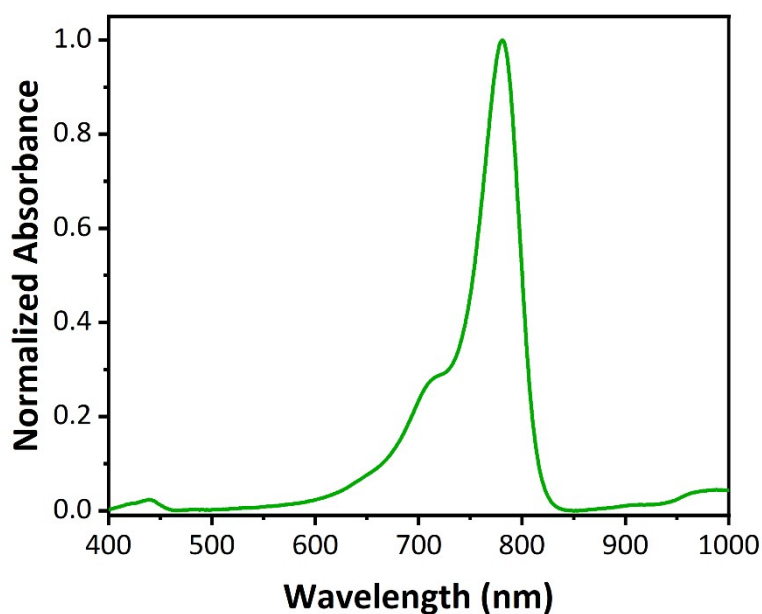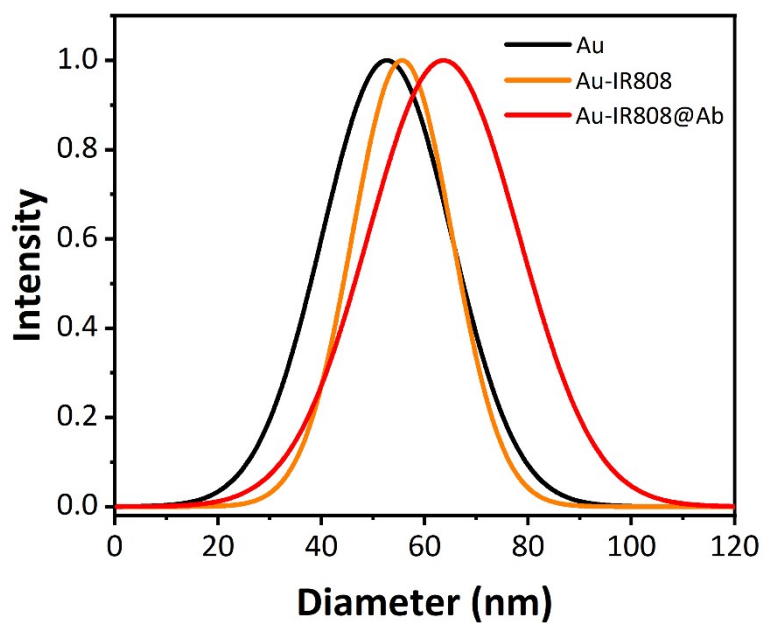
Figure S1. UV-vis spectrum of IR808.

Figure S2. DLS distribution of AuNPs (black), Au-IR808(yellow) and Au-IR808@Ab(red).
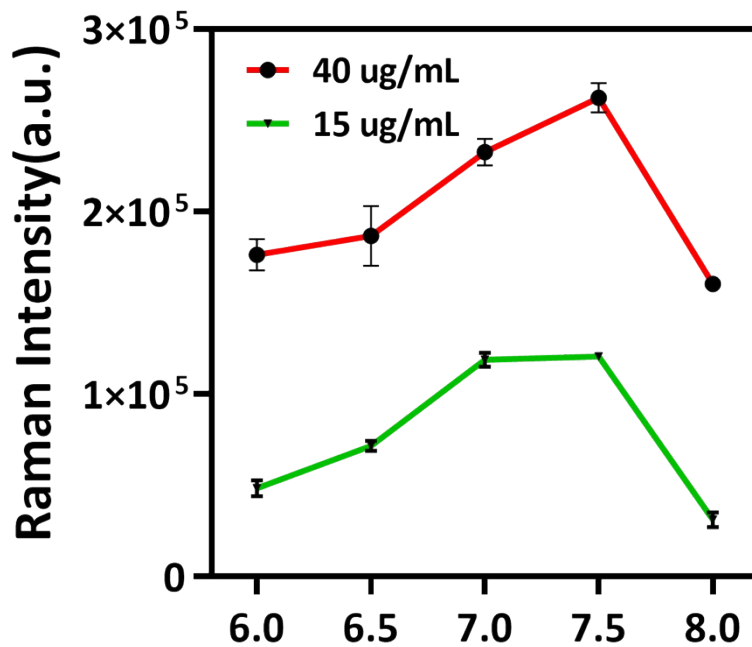

Figure S3. The effect of pH on the detection of magnetic beads modified with different amounts of antibodies.
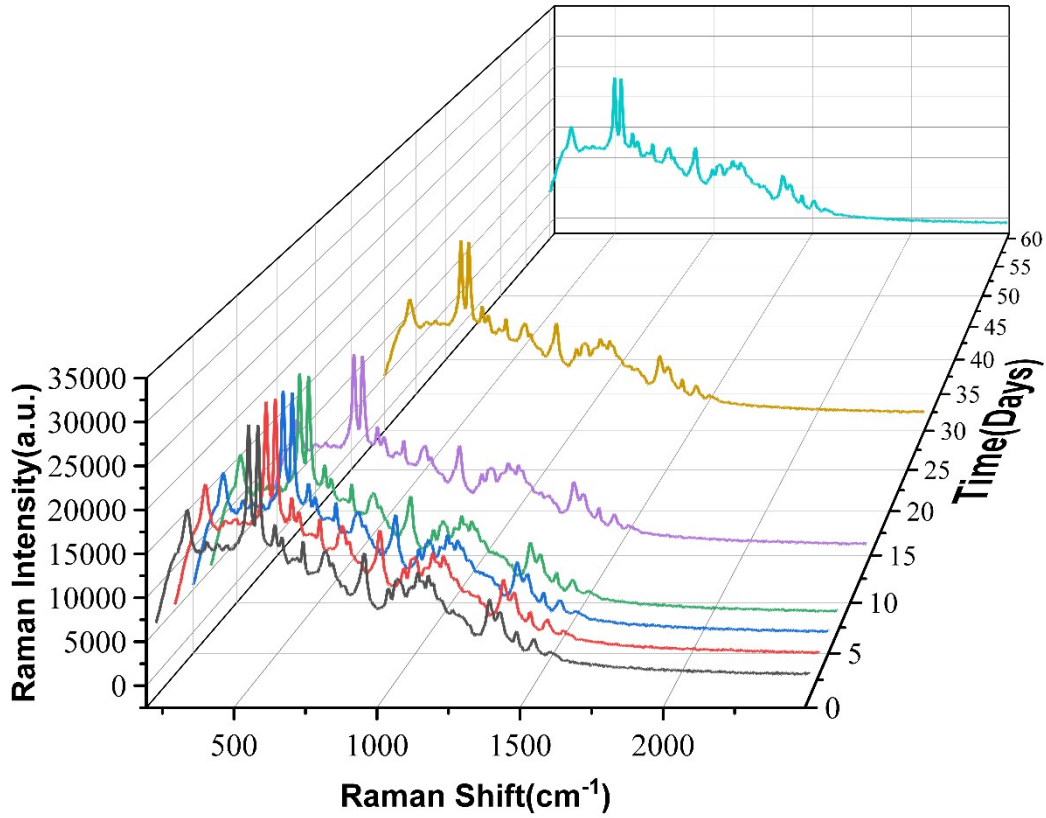
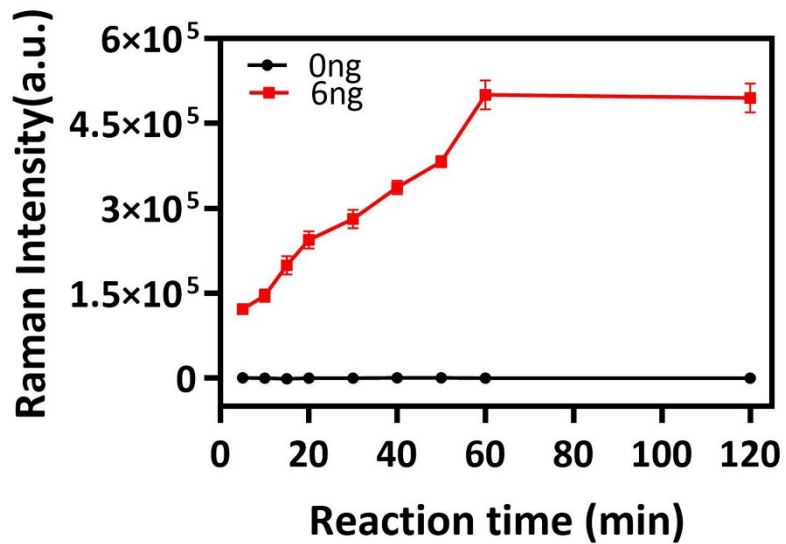**Figure S4.** Time stability of antibody signalling gold.

Figure S5. Effective reaction time analysis. The antigen concentration was 0 ng/mL (control) or 6 ng/mL (specimen).
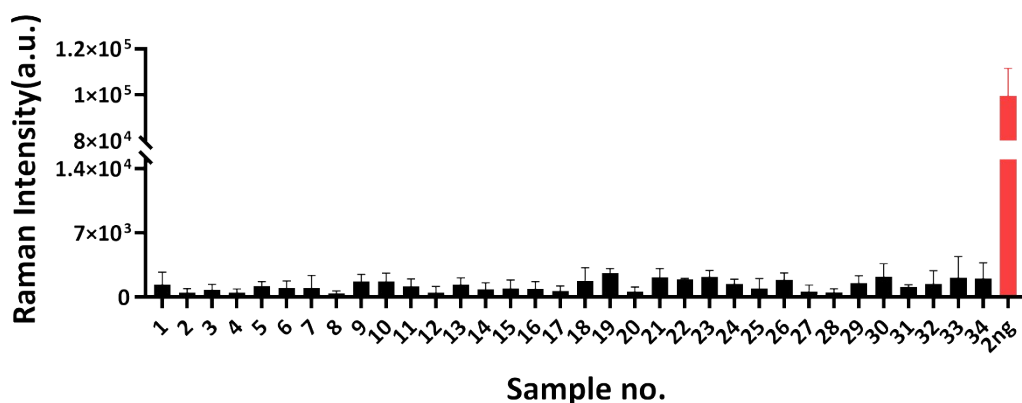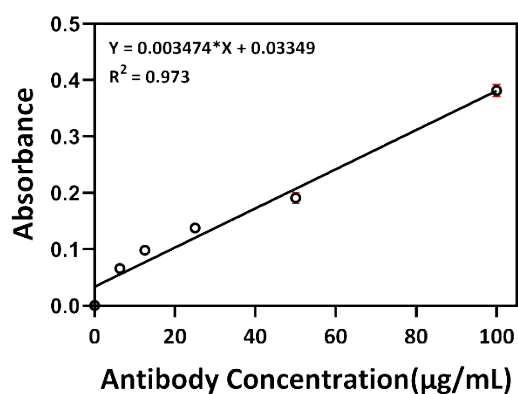
Figure S6. Detection of female serum samples.

Figure S7. Calibration curve for quantitative detection of BCA protein for quantifying antibodies.

Table S1. Calculation of the percentage of antibodies loaded on AuNPs and MB.

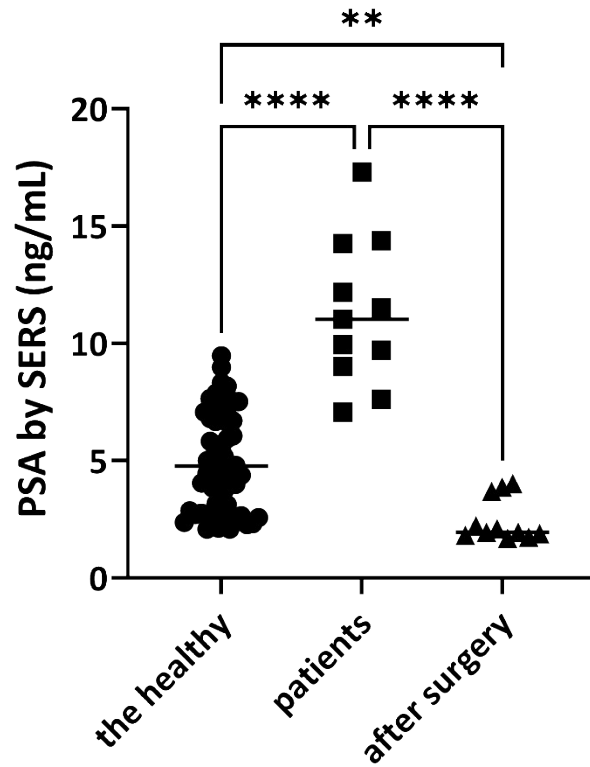|	Added Antibody Concentration (µg/mL)	Supernatant Absorbance	Supernatant Concentration (µg/mL)	Percentage of antibody loading
AuNPs	20	0.076	12.33	38.35%
MB	40	0.074	11.56	71.1%

Figure S8. The level distribution of prostate-specific antigen (PSA) in serum of different population (healthy subjects, patients, after surgery patients) by surface-enhanced Raman spectroscopy (SERS) detection.