

Supporting Information

for

An Enzyme-Induced Au@Ag Core-Shell NanoStructure Used for Ultrasensitive Surface-Enhanced Raman Scattering Immunoassay of Cancer Biomarker

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The influence parameters for the enzyme-induced silver deposition reaction.

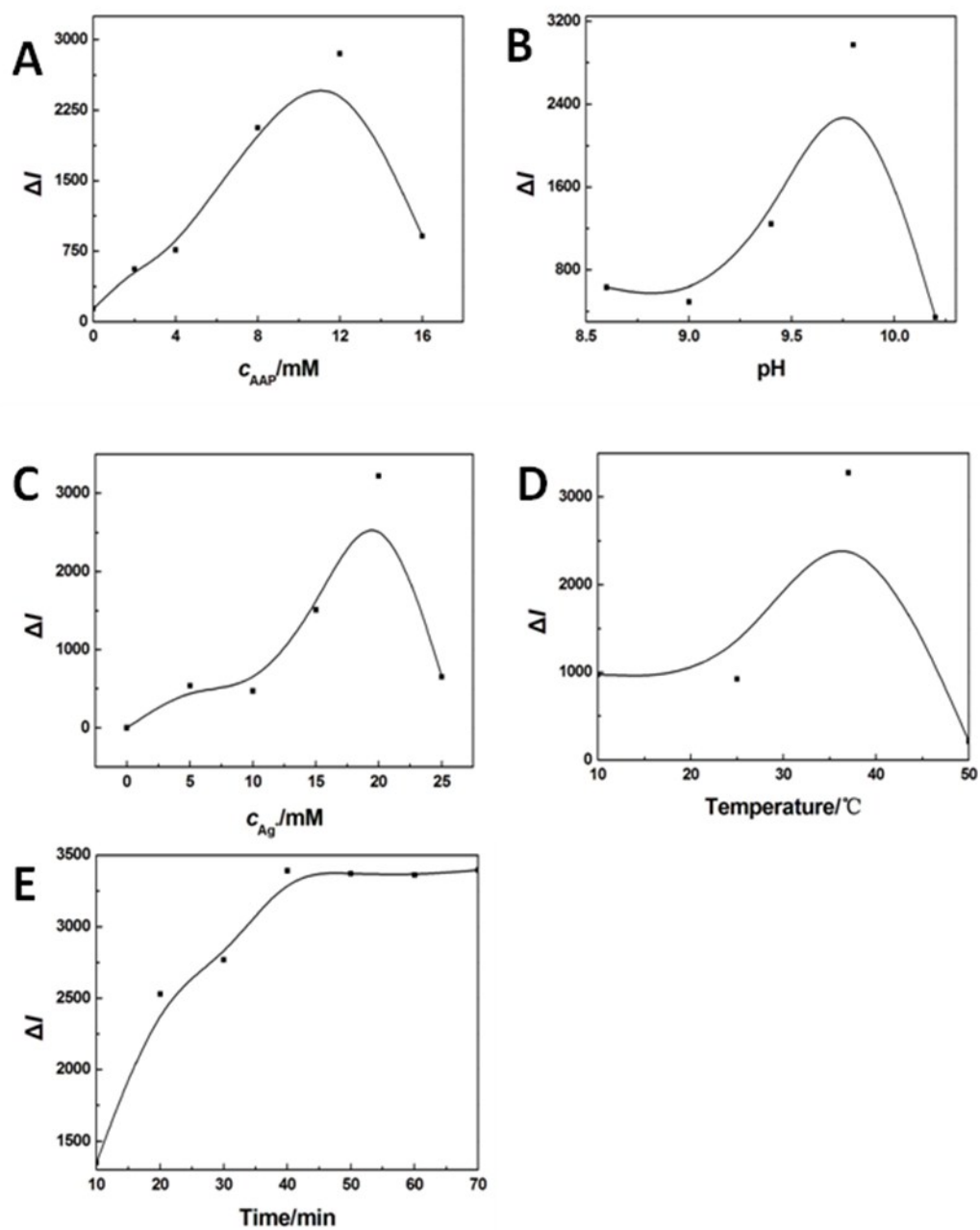


Figure S1. The efforts of (A) AAP concentration, (B) pH, (C) Ag^+ concentration, (D) reaction temperature, (E) reaction time on SERS intensity of detection solution at 1586 cm^{-1} .

The original SERS spectra of the serum samples.

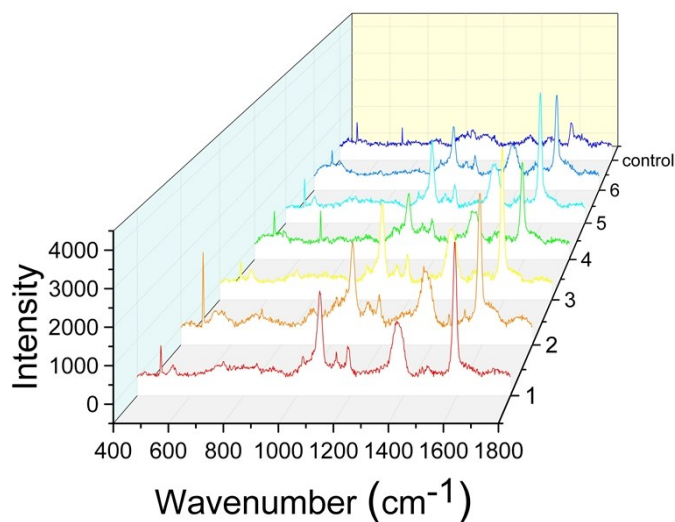


Figure S2. The original SERS spectra of the serum samples.

Comparison with other immunoassay proposed in literatures.

Table S1. Comparison of the Developed Immunoassay with Others in the Detection of AFP

Immunoassay method	Label	Detection range (ng/mL)	Detection limit (ng/mL)	Reference
SERS	AuNPs/RT ^c	1-100	0.1	1
SERS	AgNPs/RT ^d	0.1-1.5	0.1	2
SERRS ^a	silver paper	1-500	0.33	3
Colorimetric assay	AuNPs	10-40	100	4
Fluoroimmunoassay	AuNPs	20-400	12	5
Fluoroimmunoassay	Quantum dots	2.4-960	0.4	6
LA-ICPMS ^b	AuNPs	1-500	0.2	7
chemiluminescent	HRP	0.2-90	0.068	8
Electrochemiluminescence	CdTe nanocrystals	0.001-80.0	5×10^{-3}	9
Electrochemical assay	HRP	5-80	3.7	10
Electrochemical assay	HRP	0.05-6	0.02	11
SERS	Au@Ag/RT ^c	5×10^{-4} -0.1	8.1×10^{-5}	this work

^aSERS, Surface-Enhanced Resonance Raman Spectroscopy. ^bLA-ICPMS, Laser Ablation Inductively Coupled Plasma Mass. ^cRT, Raman tag, 4-Mercaptobenzoic acid. ^dRT, malachite green isothiocyanate

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