

## Supporting Information

# AuNP array coated substrate for the sensitive and homogeneous SERS-immunoassay detection of human Immunoglobulin G

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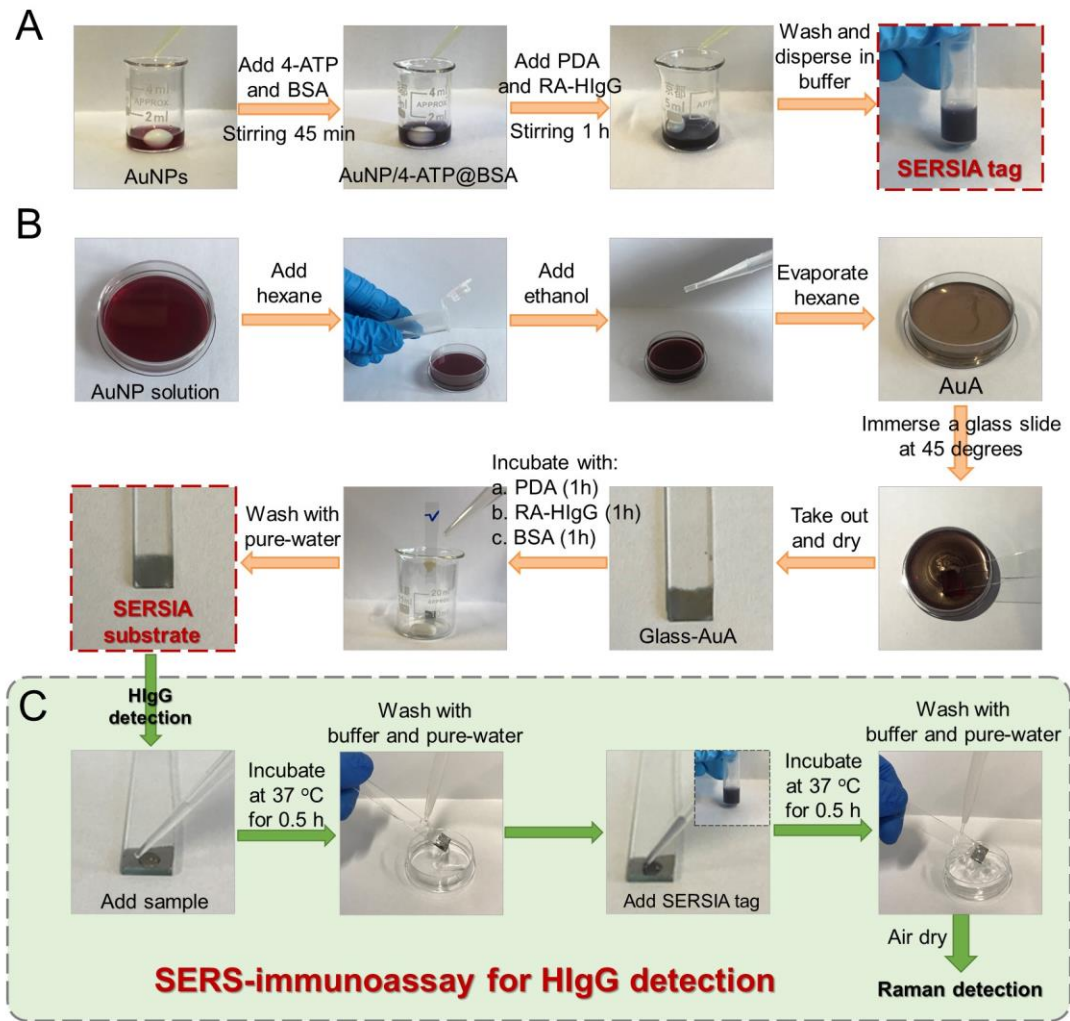
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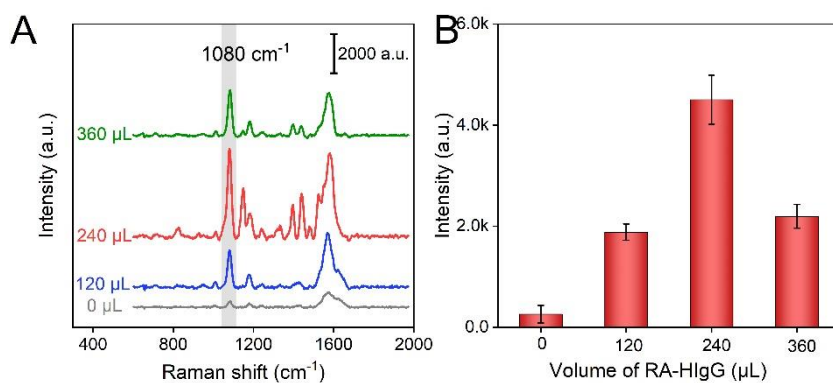
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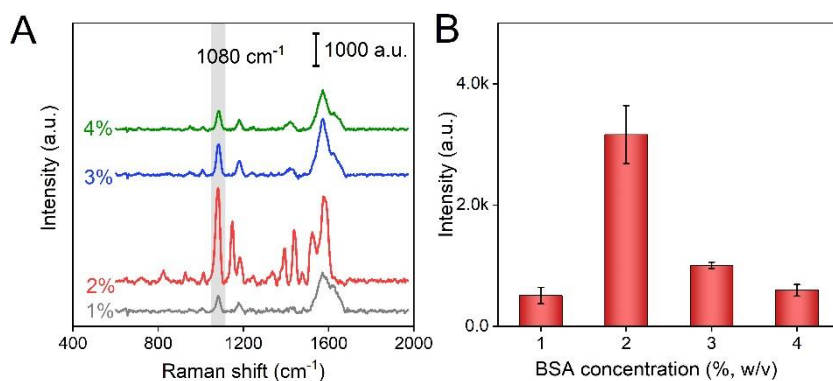
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**Fig. S1** The fabrication of SERSIA tag (A) and SERSIA substrate (B). The SERS-immunoassay process for the detection of HlgG (C).



**Fig. S2.** Optimization of the amount of RA-HIgG modified on the SERSIA substrate. (A) The Raman spectra detected on the SERSIA substrates modified by different amount of RA-HIgG. (B) The corresponding peak intensities at 1080 cm<sup>-1</sup>.



**Fig. S3.** Optimization of the amount of BSA modified on the SERSIA substrate. (A) The Raman spectra detected on the SERSIA substrates modified by different concentration of BSA. (B) The corresponding peak intensities at 1080 cm<sup>-1</sup>.

**Table S1.** comparison of the practical detection ability with reference

| <b>Method</b>               | <b>Sample</b>       | <b>Analyte</b> | <b>Recovery (%)</b> | <b>RSD (%)</b> | <b>Ref.</b> |
|-----------------------------|---------------------|----------------|---------------------|----------------|-------------|
| PLISA                       | Human serum         | HIgG           | 97.2-102.2          | 2.36-2.88      | 1           |
| FLISA                       | Human serum         | HIgG           | 98.7-105            | 2.32-2.86      | 2           |
| DNAzyme-Based ELISA         | cellular homogenate | HIgG           | 99-104              | 3.4-16         | 3           |
| Plasmonic ELISA             | fetal Bovine Serum  | HIgG           | 83.3-103.8          | 5.5-13.8       | 4           |
| FLISA                       | Human serum         | HIgG           | 90-106.6            | 2.6-10.5       | 5           |
| electrochemical immunoassay | Human serum         | HIgG           | 91.3-109            | 3.3-5.9        | 6           |
| SERS-immunoassay            | Human serum         | HIgG           | 103.6-105.3         | 4.55-4.66      | this work   |

## References

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