

Supporting Information

Silver-Platinum Hollow Nanoparticles as Labels for Colorimetric Lateral Flow Assay

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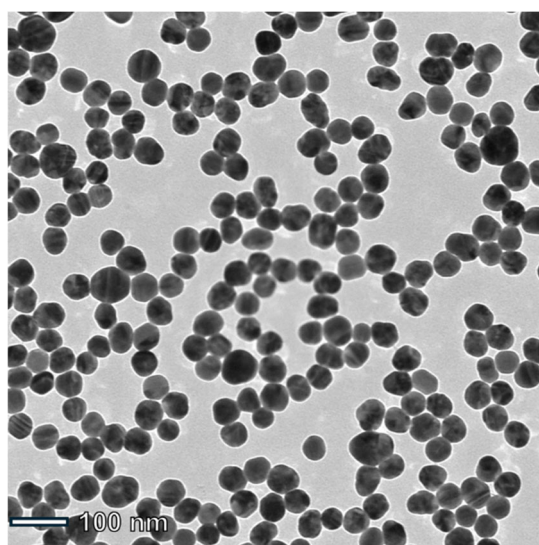


Figure S1. TEM image of citrate-capped silver nanoparticles (Ag NPs) with an average diameter of 40.3 nm. These Ag NPs were used as sacrificial templates for the synthesis of Ag-Pt hollow nanoparticles (Ag-Pt HNPs) shown in Figure 1.

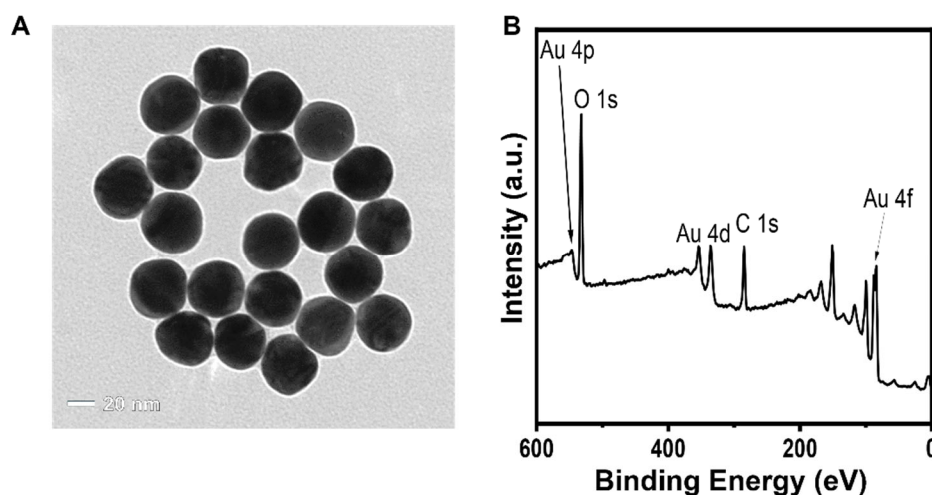


Figure S2. Citrate-capped gold nanoparticles (Au NPs) with an average diameter of 40.8 nm. (A) A representative TEM image of the Au NPs. (B) An XPS spectrum recorded from the Au NPs.



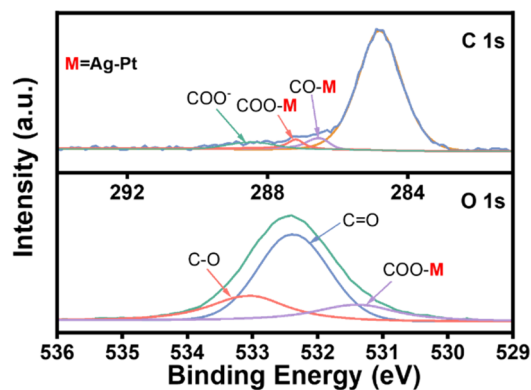


Figure S3. High-resolution XPS spectra of the C 1s and O 1s regions shown in Figure 1D. The peaks were analyzed and assigned according to the literature [1,2].

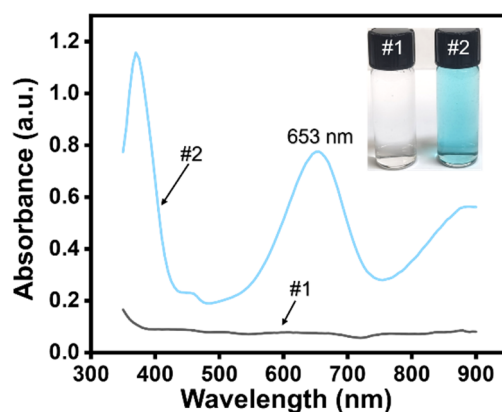


Figure S4. UV-vis spectra recorded from 0.2 M NaOAc/HOAc buffer solution, pH 4.0, containing 0.8 mM TMB and 2.0 M H₂O₂ in the absence (#1) and presence (#2) of Ag-Pt HNPs (sample in Figure 1). Insets show the photographs of corresponding solutions.

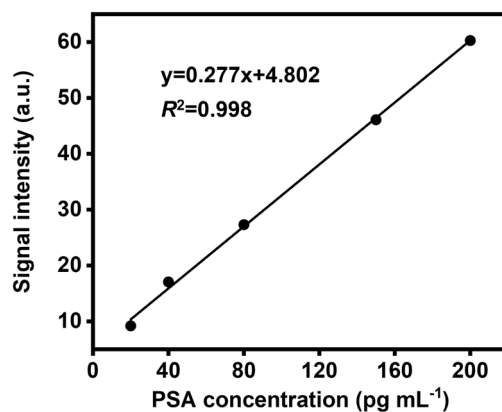


Figure S5. Calibration curve of the Ag-Pt HNP-based CLFA for detection of PSA standards in 1:1 (v/v) buffer/human serum mixture. Each data point in the plot represents an average of six independent measurements.

References

1. Tan, Y.; Huang, D.; Luo, C.; Tang, J.; Kwok, R.T.; Lam, J.W.; Sun, J.; Liu, J.; Tang, B.Z. In Vivo Aggregation of Clearable Bimetallic Nanoparticles with Interlocked Surface Motifs for Cancer Therapeutics Amplification. *Nano Lett.* **2023**, *23*, 7683–7690.
2. Mikhlin, Y.L.; Vorobyev, S.A.; Saikova, S.V.; Vishnyakova, E.A.; Romanchenko, A.S.; Zharkov, S.M.; Larichev, Y.V. On the Nature of Citrate-derived Surface Species on Ag Nanoparticles: Insights from X-ray Photoelectron Spectroscopy. *Appl. Surf. Sci.* **2018**, *427*, 687–694.