Electronic Supplementary Material (ESI) for Analyst.

Dichromatic plasmonic ELISA CD81 protein sensor for ultrasensitive detection of preeclampsia

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Materials and reagents

All chemical reagents used in the experiment have reached analytical purity or higher. Obtained ultrapure water (≥18.25 MΩ/cm) through Milli-Q purification systems (purchased from Sigma-Aldrich Chemical Co., Ltd. in the United States). Human CD81 protein, the probes, and 96 well polystyrene plates used to specifically capture the target protein CD81 were acquired from GenScript Biotechnology Co., Ltd. CD81 antibody (B-11) conjugate of horse radish peroxidase (HRP), were purchased from Santa Cruz Biotechnology. The Trisodium citrate dihydrate is from Yuanye Bio-Technology Co., Ltd., and NMP is purchased from Innochem Technology Co., Ltd. The Gold chloride trihydrate solution is purchased from Aladdin Co., Ltd. The solvent for protein and antibodies is PBS buffer, prepared by dry powder, which is purchased from Solarbio Co., Ltd. 2-[4-(2-hydroxyethyl)-1-piperazinyl] ethane sulfonic acid (HEPES) was supplied from Sigma Aldrich (Shanghai) Trading Co., Ltd.

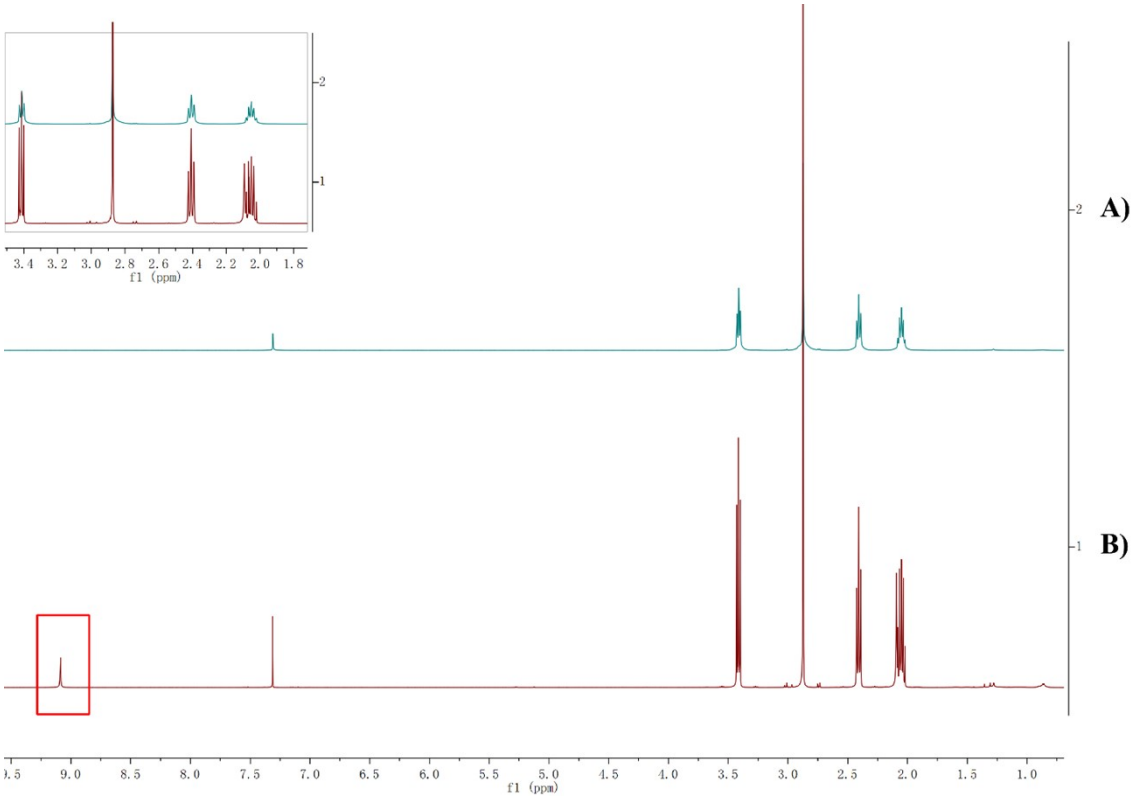

Fig. S1. ^{1}H NMR spectra of (A) pure NMP, (B) mixture of NMP and H_2O_2.

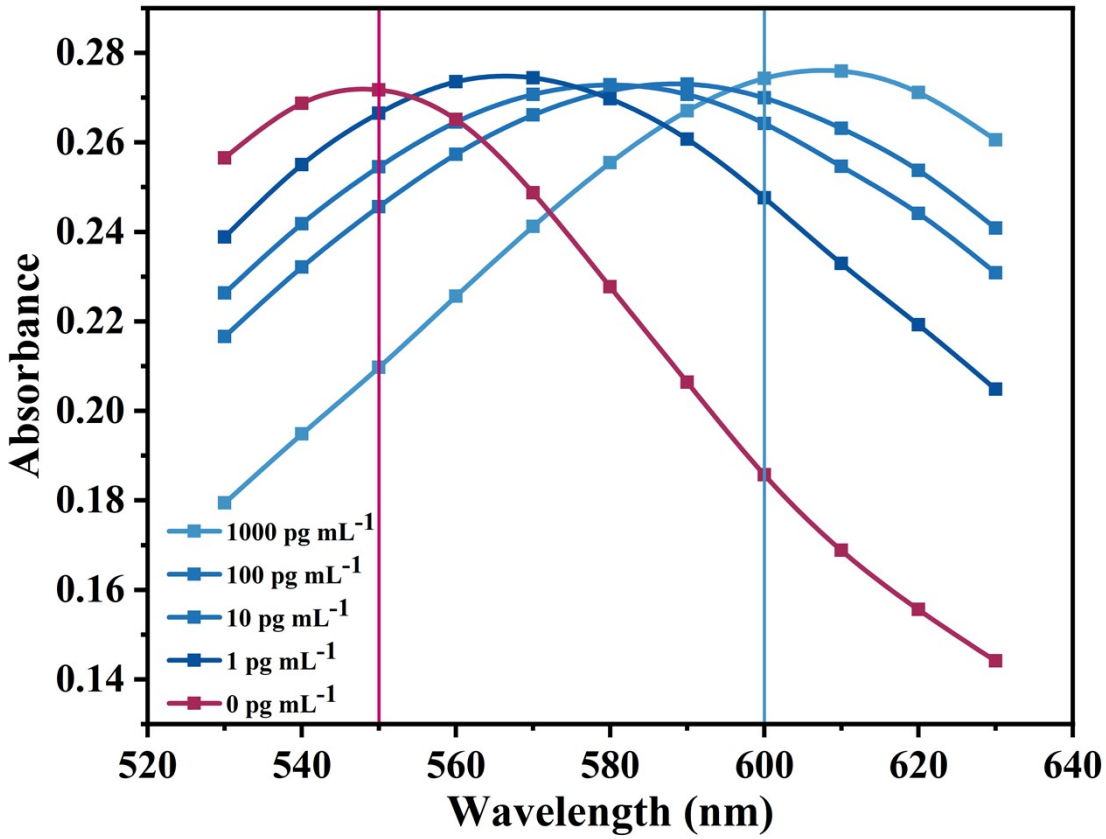

Fig. S2. With different concentrations of CD81, the absorbance of the solution at 550 nm and 600 nm were changed regularly.

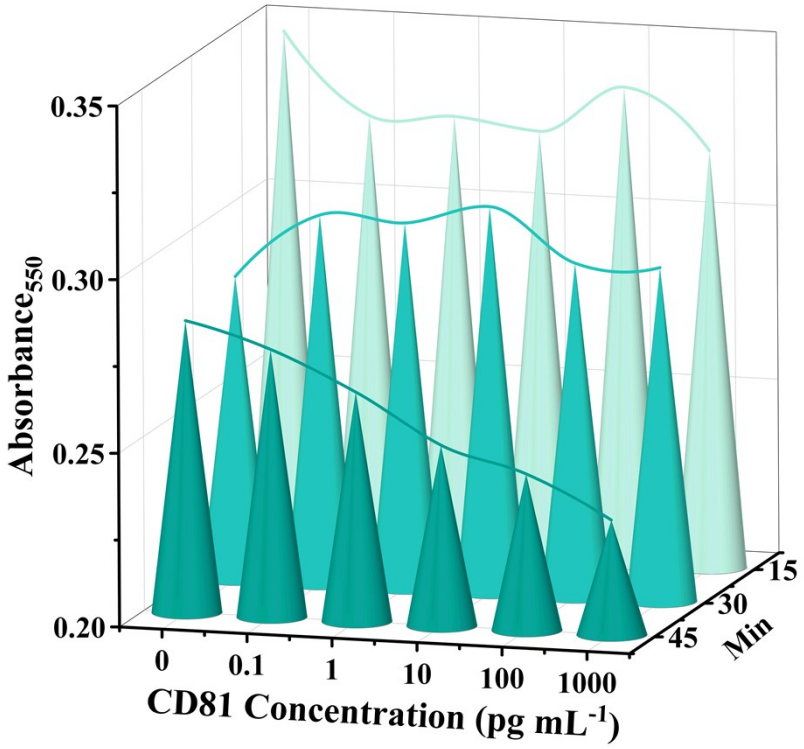

Fig. S3. Typical absorbance at different incubation times.

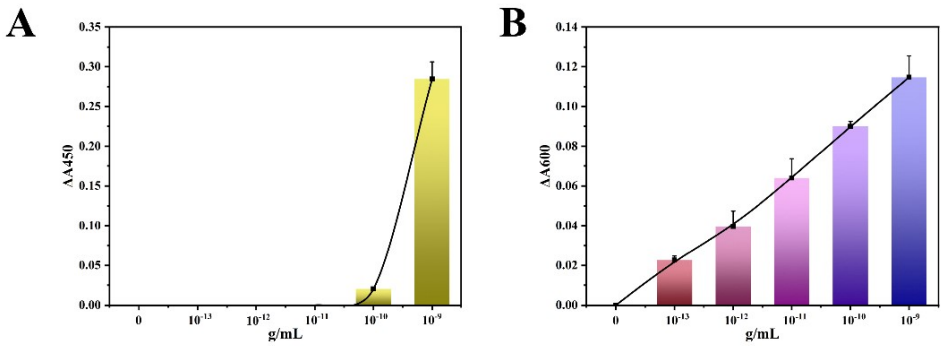

Fig. S4. Quantitative performance of conventional ELISA (A) and plasmonic ELISA (B): the decreased value of corresponding peak absorbance readings versus CD81 concentrations. Error bars are standard deviations of three repetitive experiments.

Fig. S5. Storage stability performance. Color change of AuNPs solution in five days.