Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Plasmonic Biochips with Enhanced Stability in Harsh Environments for the Sensitive Detection of Prostate-Specific Antigen

I-Hsiu Yeh[†], Hui-Fang Shi[†], Evan Darius[†], Mei-Chin Lien[†], Yin-Cheng Lu[†], Congzhou Wang[‡§], and Keng-Ku Liu[†*]

[†.] Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu 300044, Taiwan

[‡.] Nanoscience and Biomedical Engineering, South Dakota School of Mines and Technology, Rapid City, South Dakota 57701, USA

[§.] BioSystems Networks & Translational Research (BioSNTR), Rapid City, South Dakota 57701, USA

*To whom correspondence should be addressed: kkliu@mx.nthu.edu.tw

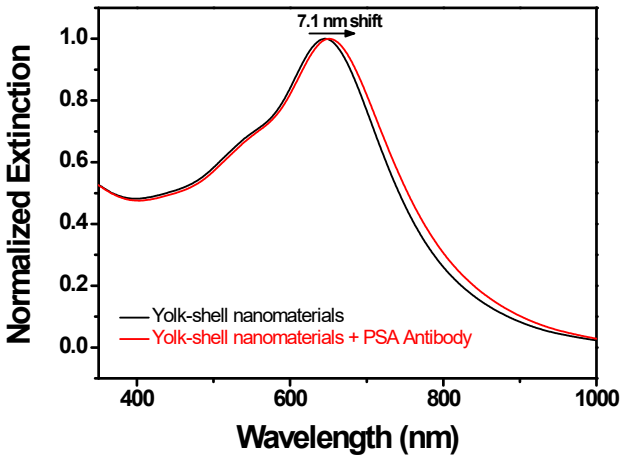

Fig. S1 Representative UV-Vis spectrum showing the LSPR shift after conjugation of yolk-shell nanomaterials with PSA antibody in solution.

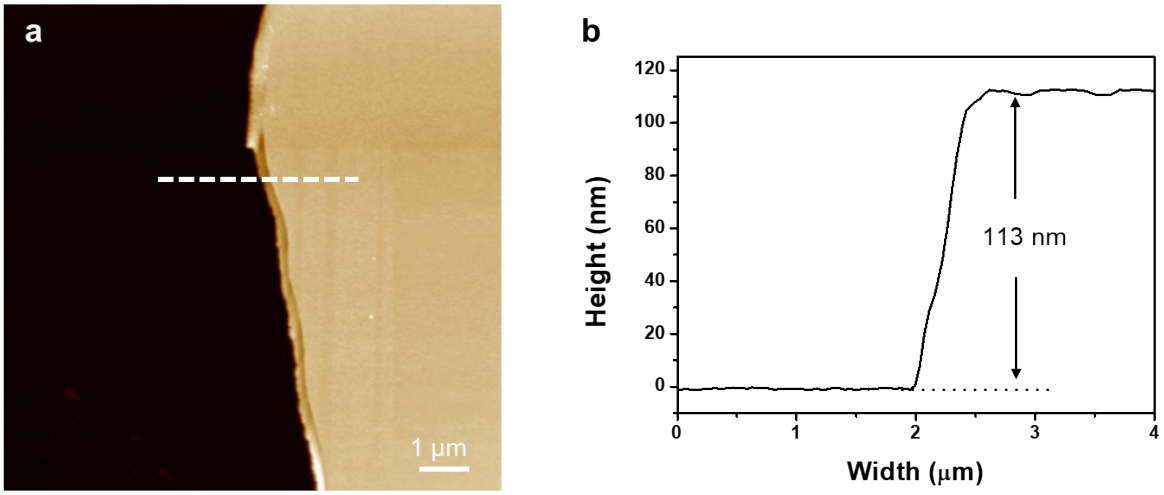

Fig. S2 (a) AFM image of the silk film. (b) Height profile along the dotted line in (a).

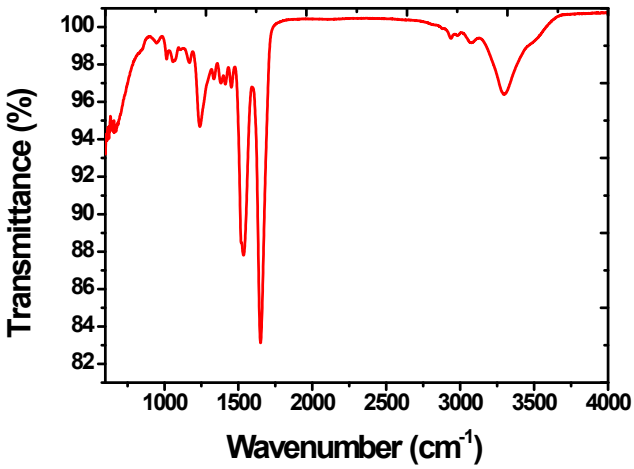

Fig. S3 FTIR spectrum of silk fibroin.

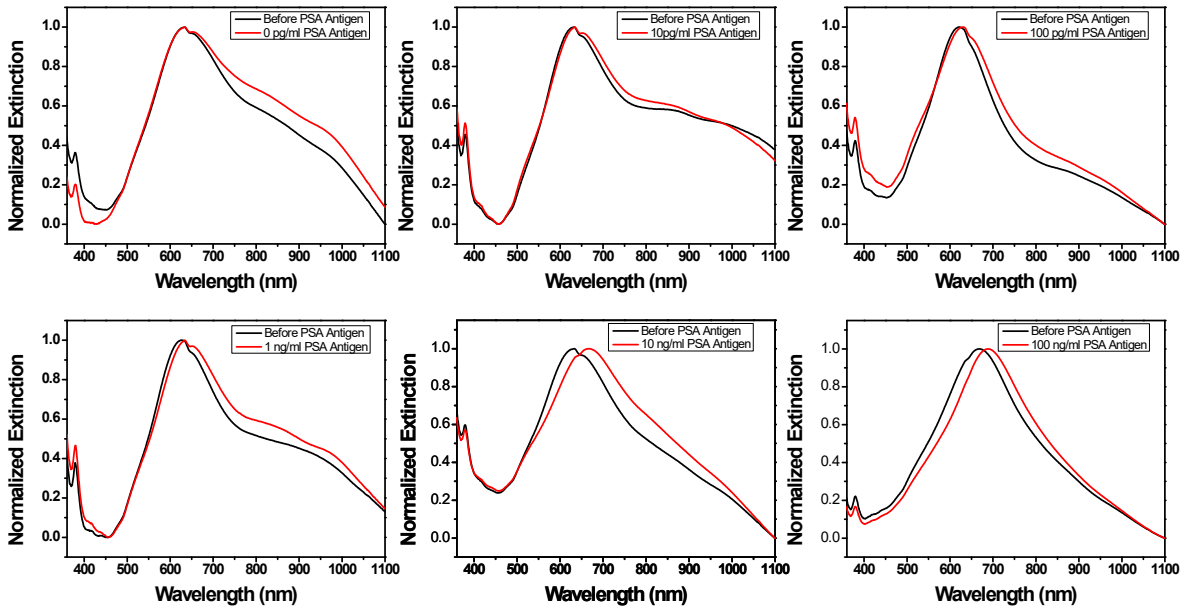

Fig. S4 Representative UV-vis spectra of yolk-shell nanomaterials-PSA antibodies conjugate on glass substrates exposed to various concentrations of PSA.

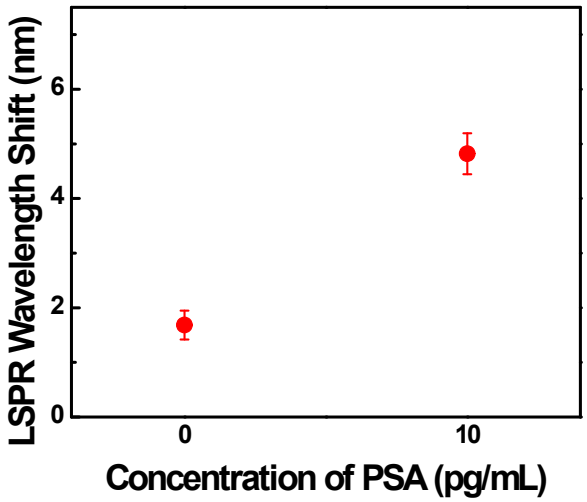

Fig. S5 LSPR shift of yolk-shell nanomaterials-PSA antibodies conjugate on glass substrates exposed to the blank sample and PSA at the concentration of 10 pg/mL. n=3.

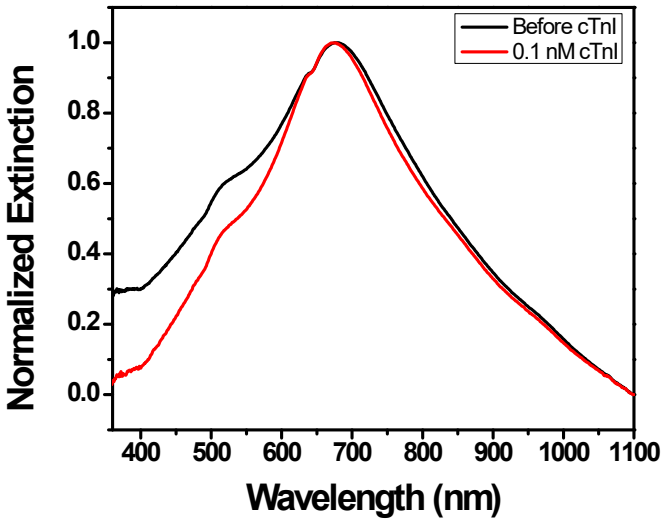

Fig. S6 LSPR shift of yolk-shell nanomaterials-PSA antibodies conjugate on glass substrates exposed to the interfering protein.

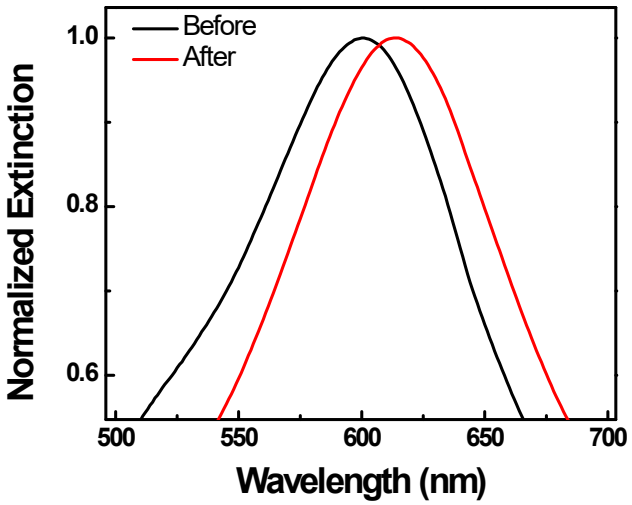

Fig. S7 LSPR shift of yolk-shell nanomaterials-PSA antibodies conjugate on glass substrates exposed to a complex medium comprising PSA (100 ng/mL), cTnI (0.1 nM), and Hb (150 mg/mL).