

## Supporting information

# Integration of Ni/NiO nanoparticles and a microfluidic ELISA chip to generate a sensing platform for *Streptococcus pneumoniae* detection

Chang-Ching Weng,<sup>1</sup> Chien-Yu Chao,<sup>2</sup> Sih-Ting Wu,<sup>2</sup> Ping-Hsien Tsou,<sup>3, 4</sup> Wei-Tin Chen,<sup>5\*</sup> Bor-Ran Li,<sup>2,6,7\*</sup> and Yaw-Kuen Li<sup>1,7\*</sup>

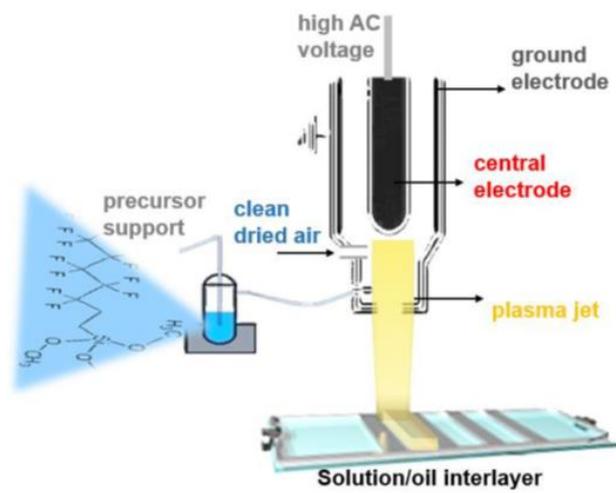
1. Department of Applied Chemistry, College of Science, Yang Ming Chiao Tung University, Hsinchu, Taiwan.
2. Institute of Biomedical Engineering, College of Electrical and Computer Engineering, Yang Ming Chiao Tung University, Hsinchu, Taiwan.
3. Department of Biological Science and Technology, College of Biological Science and Technolog, Yang Ming Chiao Tung University, Hsinchu, Taiwan.
4. Department of Internal Medicine, National Taiwan University Hospital, Hsin-Chu Branch, Hsinchu, Taiwan.
5. Center for Condensed Matter Sciences and Center of Atomic Initiative for New Materials, National Taiwan University, Taipei, Taiwan
6. Department of Eectrical and Computer Engineering, College of Electrical and Computer Engineering, Yang Ming Chiao Tung University, Hsinchu, Taiwan.
7. Center for Emergent Functional Matter Science, Yang Ming Chiao Tung University, Hsinchu, Taiwan.

\*: Corresponding author

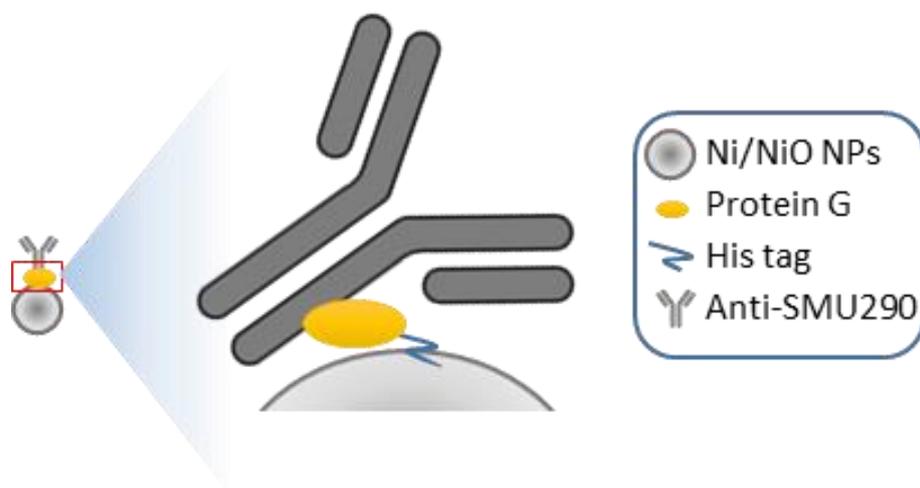
[weitinchen@ntu.edu.tw](mailto:weitinchen@ntu.edu.tw) (W.-T. Chen)

[liborran@g2.nctu.edu.tw](mailto:liborran@g2.nctu.edu.tw) (B.-R. Li)

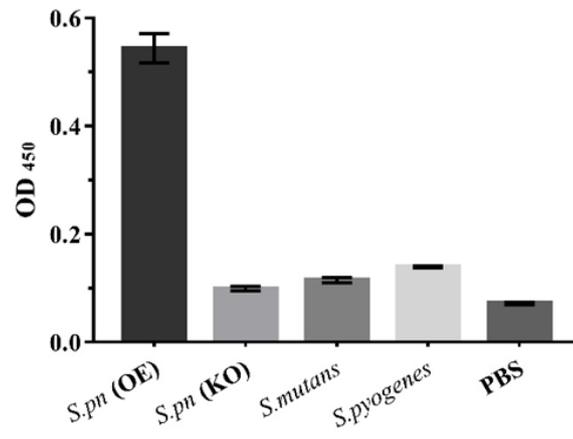
[nctuykl@g2.nctu.edu.tw](mailto:nctuykl@g2.nctu.edu.tw) (Y.-K. Li)



**Figure S1.** Schematic representation of the surface modification of glass.



**Figure S2.** Scheme of antibody bound Ni/NiO NPs.



**Figure S2.** Specificity of the Anti-SMU290 antibody.