Supporting Information

A fast and reliable detection of SARS-CoV-2 antibodies based on surface plasmon resonance

Caroline Rodrigues Basso[a]*, Camila Dantas Malossi[a], Amanda Haisi[a], Valber de Albuquerque Pedrosa[b], Alexandre Naime Barbosa[c], Rejane Tommasini Grotto[d], João Pessoa Araujo Junior[a].

[a] *Institute of Biotechnology, UNESP- Botucatu, SP 18607–440, Brazil*
[b] *Department of Chemistry and Biochemistry, Institute of Bioscience, UNESP-Botucatu, SP 18618-000, Brazil*
[c] *Department of Infectious Diseases, Dermatology, Diagnostic Imaging and Radiotherapy, Faculty of Medicine of Botucatu, UNESP-Botucatu, SP 18618-687, Brazil*
[d] *Department of Medical Clinic, Faculty of Medicine of Botucatu, UNESP-Botucatu, SP 18618-687, Brazil*

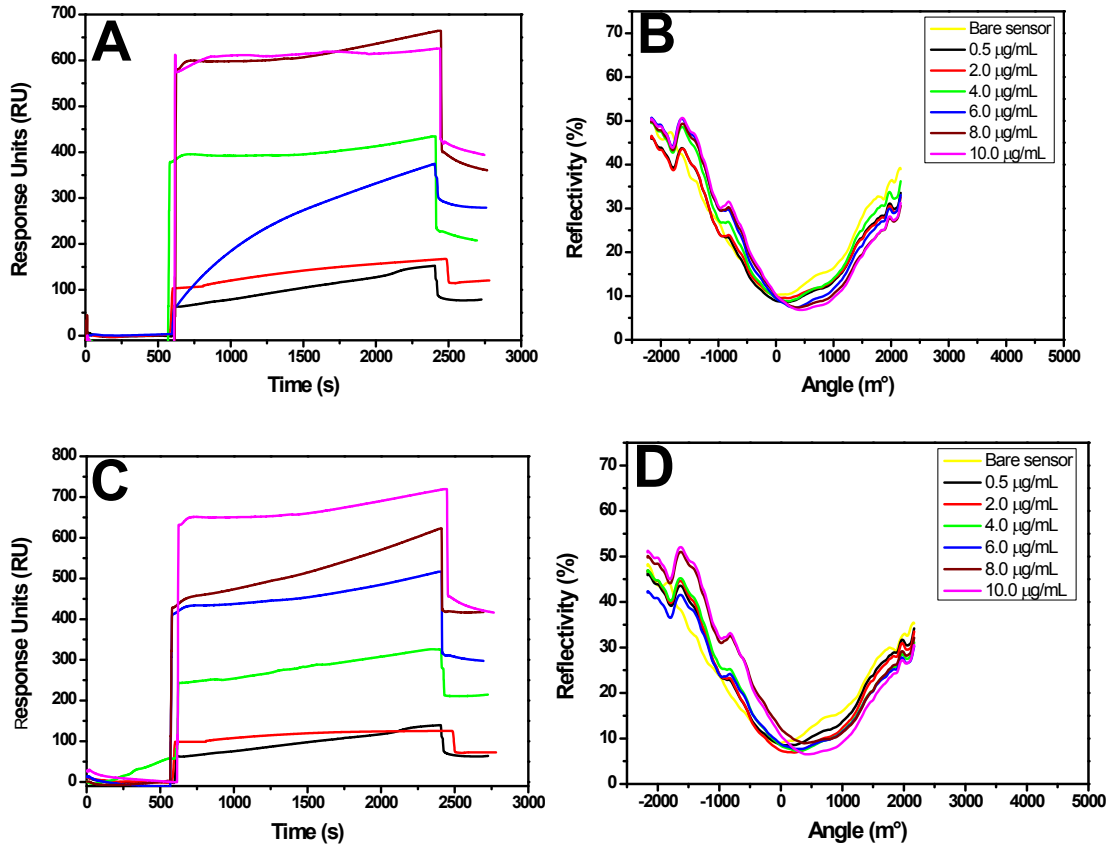

Fig. S1. Sensorgram generated for diferente N protein concentrations. **A** and **C-** N protein at: bare sensor (yellow line), 0.5 (black line), 2.0 (red line), 4.0 (green line), 6.0 (blue line), 8.0 (brown line) and 10.0 µg/mL (pink line). **B** and **D-** Variation of SPR angle response for different N protein concentration.

* Corresponding author.
E-mail address: caroline.basso@unesp.br

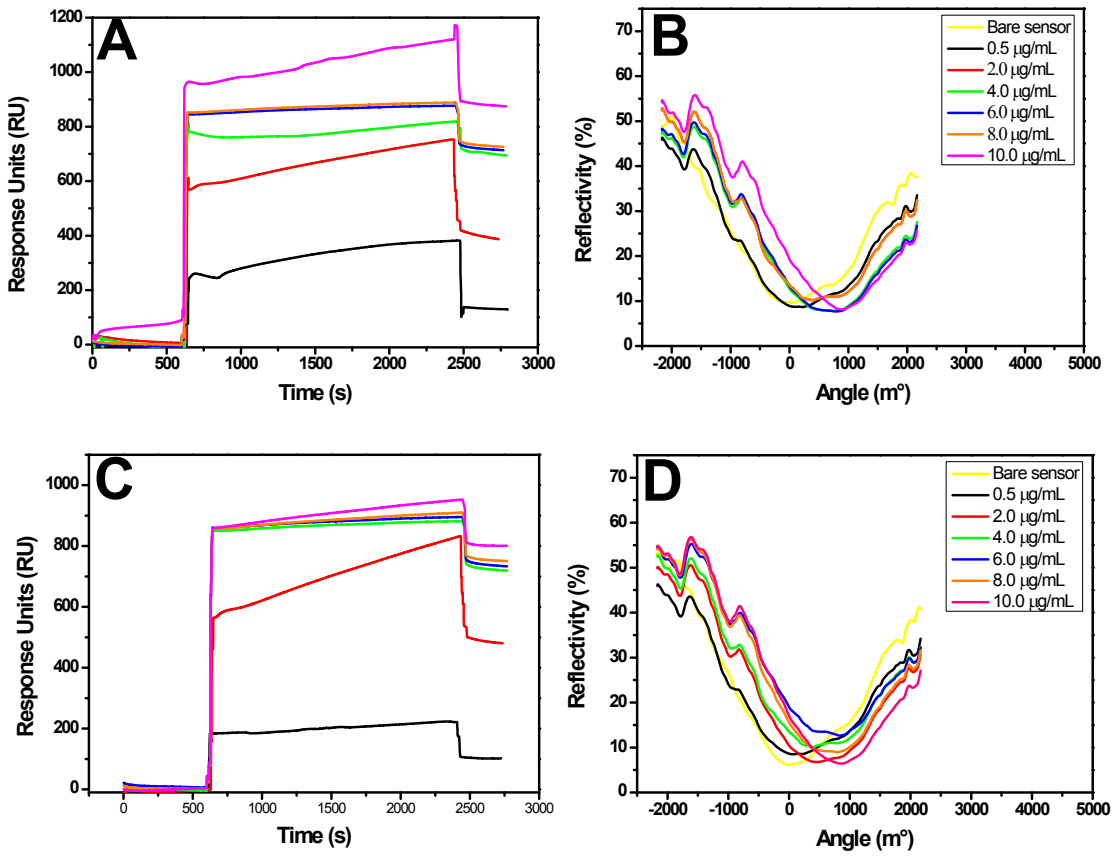

Fig. S2. Sensorgram generated for diferente S protein concentrations. **A** and **C-** N protein at: bare sensor (yellow line), 0.5 (black line), 2.0 (red line), 4.0 (green line), 6.0 (blue line), 8.0 (orange line) and 10.0 µg/mL (pink line). **B** and **D-** Variation of SPR angle response for different N protein concentration.

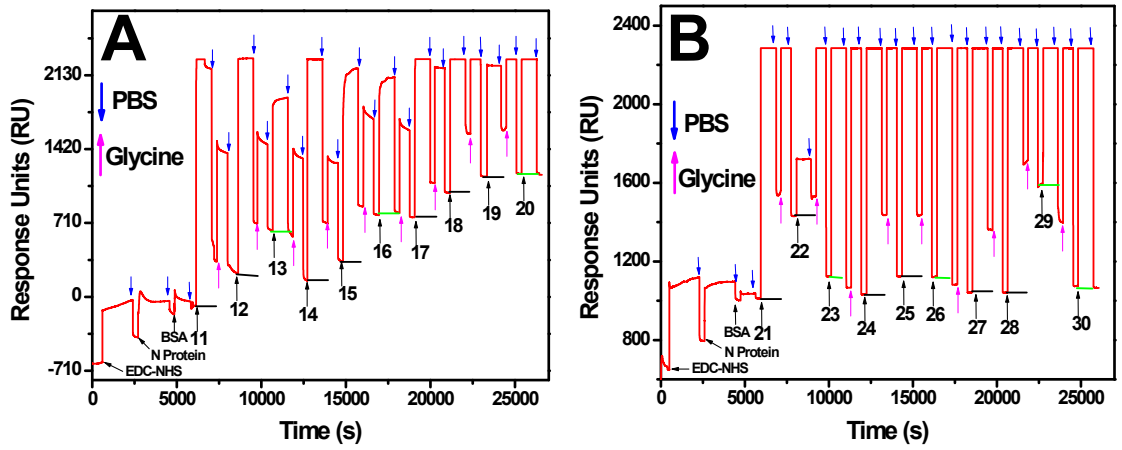

Fig. S3. SPR response to IgG antibodies. **A-** Graph showing changes on sensor surface due to the nucleocapsid protein (N) immobilization and Covid-19-positive (with antibodies) and -negative (without antibodies) sera injections (number samples 11-20). **B-** Sensor surface modification with number samples 21-30. All washing steps were performed based on PBS at pH 7.4; it represented by blue arrows down (↓) and every step of the sensor surface regeneration process was based on glycine-HCl solution; they are represented by pink arrows up (↑).

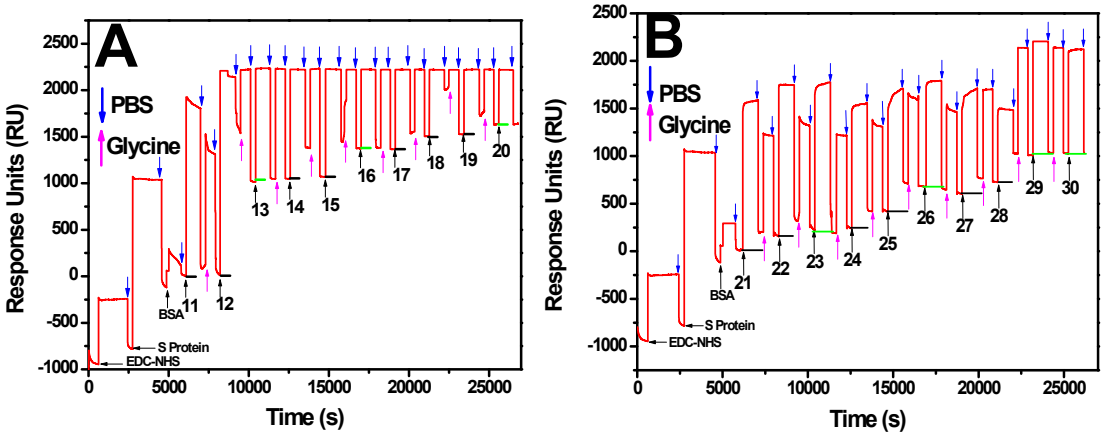

Fig. S4. SPR response to IgG antibodies. **A-** Graph showing changes on sensor surface due to spike (S) immobilization and Covid-19-positive (with antibodies) and -negative (without antibodies) sera injections (number samples 11-20). **B-** Sensor surface modification with number samples 21-30. All washing steps were performed based on PBS at pH 7.4; it represented by blue arrows down (↓) and every step of the sensor surface regeneration process was based on glycine-HCl solution; they are represented by pink arrows up (↑).

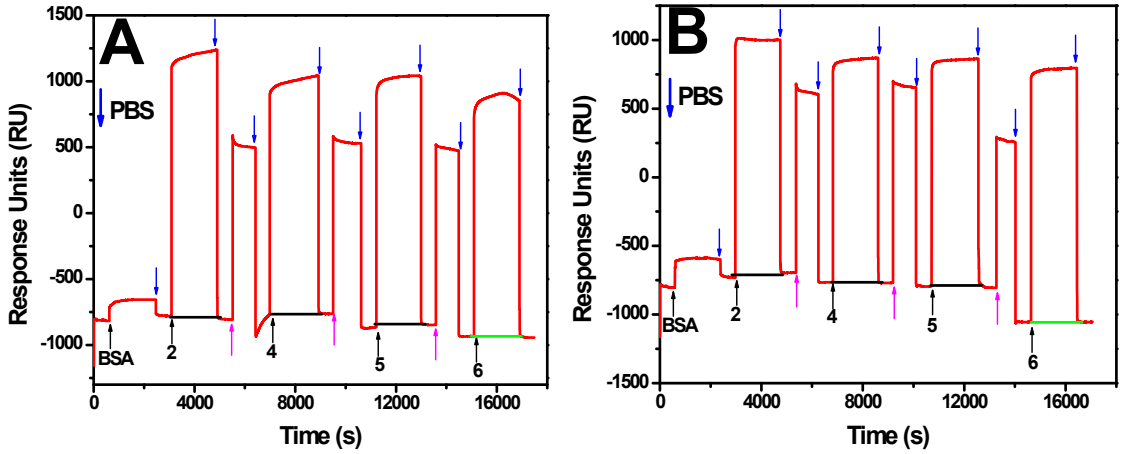

Fig. S5. SPR response binding specificity between antibodies-proteins using BSA solution. **A-** graph corresponding to the duplicate and, **B-** graph corresponding to the triplicate.