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Supplemental information

Rapid and accurate agglutination-based testing for SARS-CoV-2 antibodies

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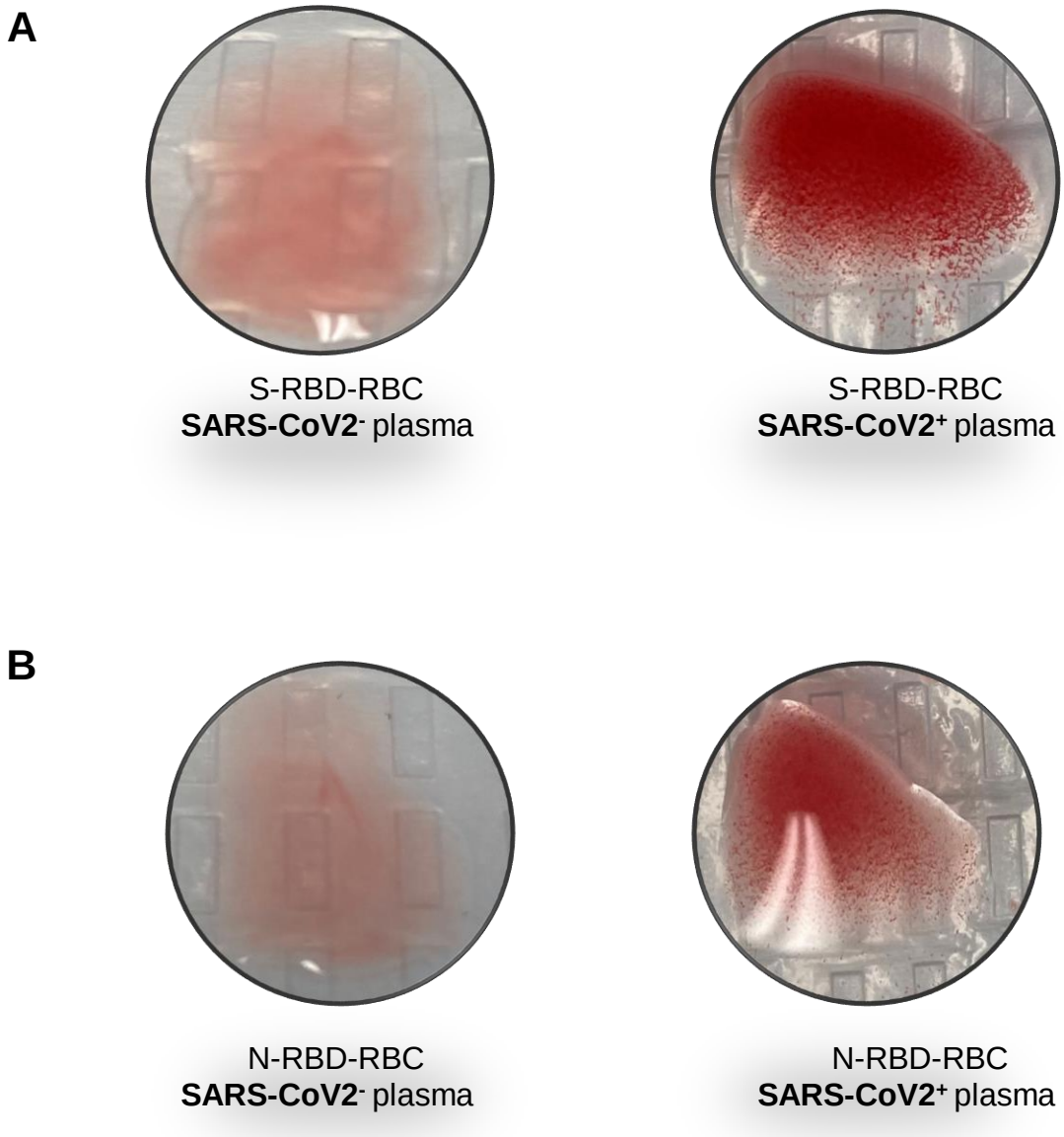

Figure S1. **SARS-CoV2 antibody testing based on RBC agglutination, related to Figure 1**.

Red blood cells (RBC, group O; R2R2) carrying the D antigen were labelled with anti-D IgG conjugated to recombinant S-RBD or N-RBD through streptavidin-biotin (i.e., IgG-streptavidin conjugated to biotin-RBD). (A) S-RBD labeled RBCs were mixed with either SARS-CoV-2^{-} (NAAT) or SARS-CoV2^{+} plasma (right). (B) N-RBD labeled RBCs were mixed with either SARS-CoV2^{-} (left) or SARS-CoV2^{+} plasma (right). Images shown were taken after 1 min incubation at room temperature.

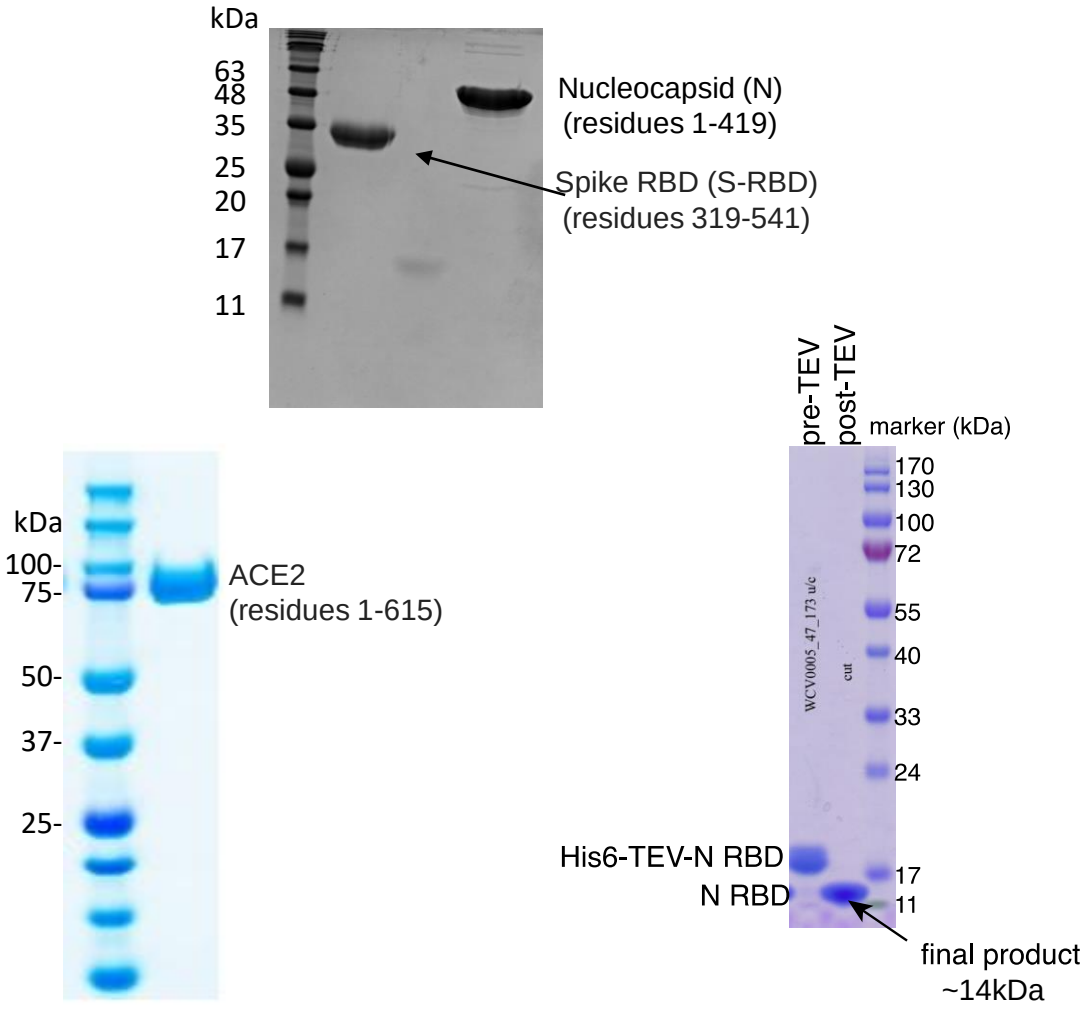

Figure S2. SDS-PAGE images of recombinant SARS-CoV-2 proteins employed in the current study, related to Figure 1-4.

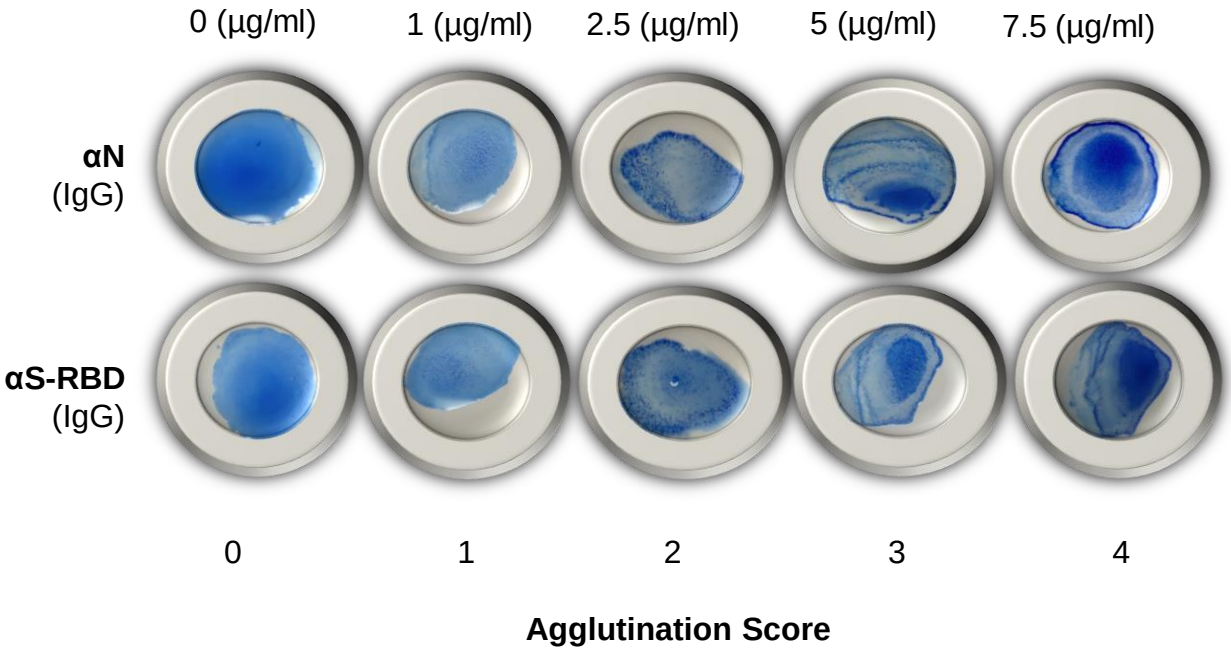

Figure S3. Agglutination of blue latex particles in response to different concentrations of antibody (IgG) against the nucleocapsid (αN) or S-RBD (αS-RBD), related to Figure 3. Anti-S-RBD (monoclonal, NBP2-90980) was obtained from Novus Biologicals; Anti-Nucleocapsid (polyclonal, PA5-81794) was from ThermoFisher Scientific.

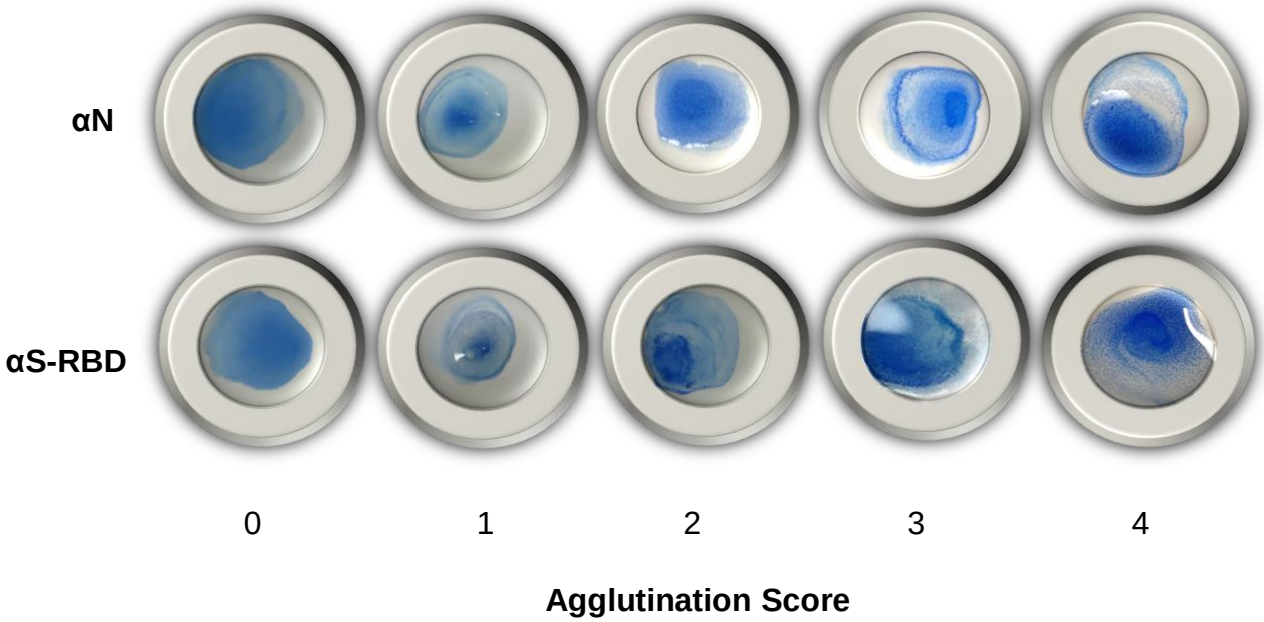

Figure S4. Representative images of agglutination induced by plasma with different agglutination scores, related to Figure 3. Shown are five samples with distinct agglutination scores (0-4) in the nucleocapsid (αN) (upper row) or the S-RBD antibody (αS-RBD) test (lower row). The scores were assigned as 4 = 75-100% agglutination; 3 = 50-75% agglutination; 2 = 25-50% agglutination; 1 = 5-25% agglutination; 0 (or negative) ≤5% agglutination.

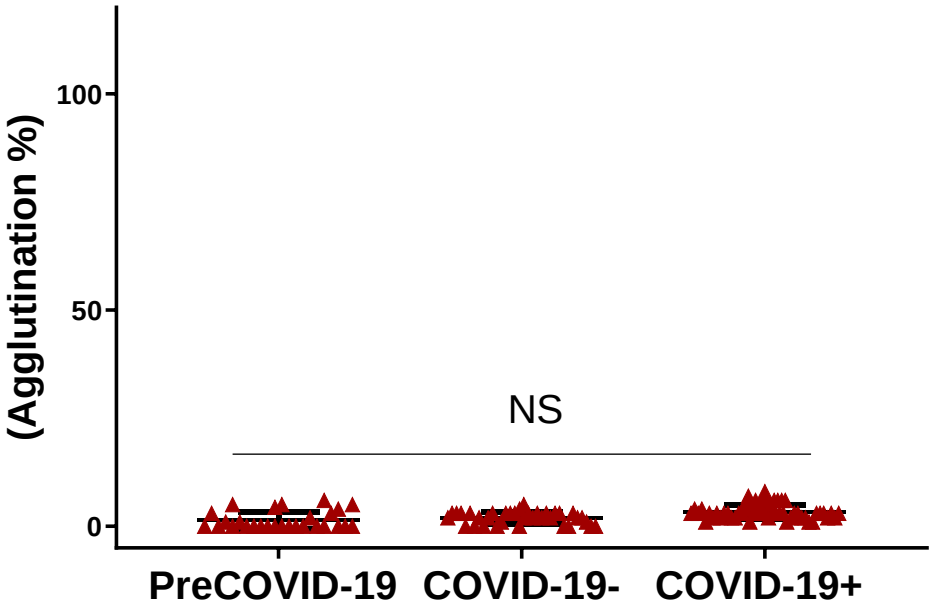

Figure S5. Unconjugated latex beads did not show non-specific antibody induced agglutination, related to Figure 3. Comparison of agglutination percentage between COVID-19^{+} (n=169), COVID-19^{-} (n=121) and Pre-COVID-19 (n=100) plasma samples using unconjugated latex particles (Latex particles without viral antigen conjugation). Statistical analyses were performed using One-Way ANOVA (NS, not significant).

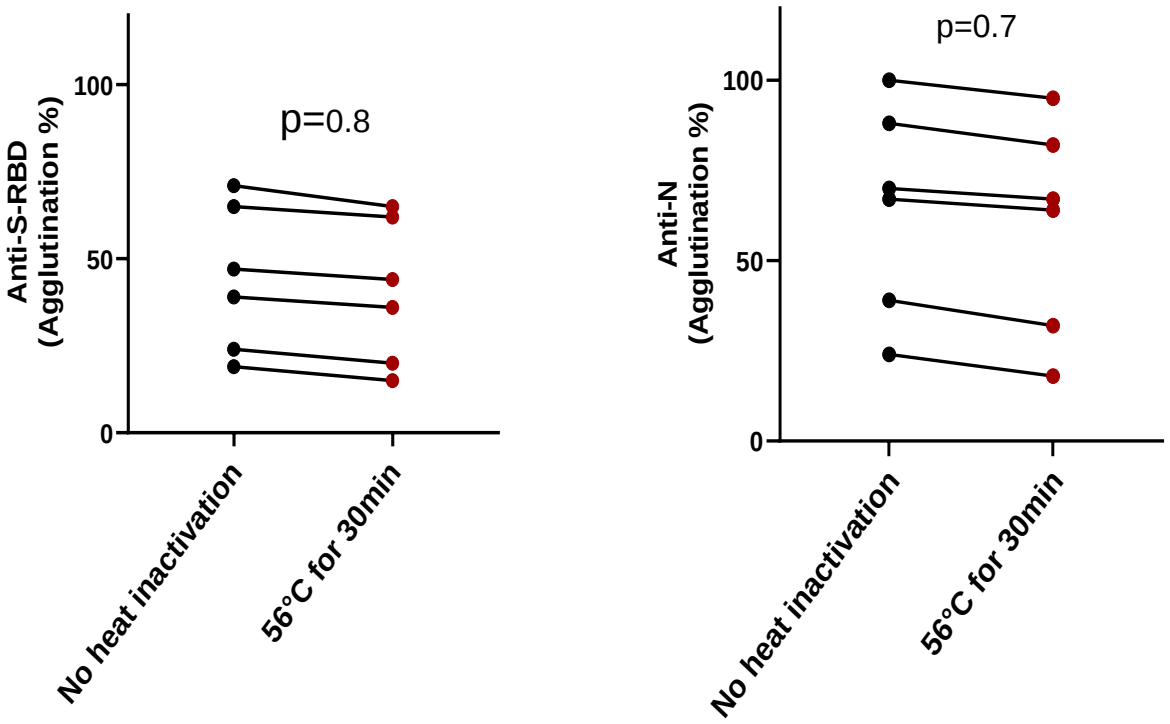

Figure S6. Heat inactivation of plasma did not affect antibody induced agglutination, related to Figures 3 and 4. Shown are agglutination percentages between samples without or with heat-inactivation in the anti-S-RBD (left) or anti-N (right) agglutination assay. p-values calculated from paired two tailed t-test (no assumption of equal variance, n=6).