

Monoclonal Anti-SARS-Related Coronavirus 2 Spike Glycoprotein Receptor Binding Domain (RBD), Chimeric Potent Neutralizing Antibody (produced *in vitro*)

Catalog No. NR-55410
ACROBiosystems Catalog No. SPD-M128

For research use only. Not for use in humans.

Contributor and Manufacturer:
ACROBiosystems, Newark, Delaware, USA

Product Description:

Antibody Class: IgG1κ
Chimeric monoclonal antibody prepared against the severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2) spike (S) glycoprotein receptor binding domain (RBD) was produced using recombinant antibody technology. The variable region was obtained from immunized mice, which was combined with constant domains of the human IgG1 molecule.¹ Representative SDS-PAGE results are shown in Figure 1.¹

Material Provided:

Each vial of NR-55410 contains approximately 100 µg of purified monoclonal antibody in phosphate buffered saline (PBS), pH 7.4 with 10% trehalose. The concentration, expressed as mg per mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-55420 was packaged aseptically in glass vials. The product is provided lyophilized and should be placed in a closed, dry environment with desiccants and stored at -20°C or colder immediately upon arrival. A frost-free freezer should be avoided, since changes in moisture and temperature may affect protein stability.

Functional Activity:

NR-55410 is specific against SARS-CoV-2 S protein RBD; no cross-reactivity was detected with S protein RBD of other coronaviruses.¹ NR-55410 has potent neutralizing activity against pseudovirus bearing SARS-CoV-2 S glycoprotein with a neutralization titer of 0.03255 nM (Figure 2).¹ The biological activity of NR-55410 was measured by its binding ability in an ELISA (Figure 3), in which immobilized SARS-CoV-2 S protein RBD (ACROBiosystems SPD-C52H3) at 1 µg per mL (100 µL per well) can bind NR-55410; the linear range is 0.05 to 0.78 ng per mL.¹ The neutralizing activity of NR-55410 was measured in dose-response curves with a SARS-CoV-2 inhibitor screening kit (ACROBiosystems EP-105) with a half maximal inhibitory concentration (IC₅₀) of 1.197 µg per mL (Figure 4) and with multiple S glycoprotein mutants (Figure 5). The biological activity of NR-55410 was also measured by its binding ability using biosensor analysis, in which loaded NR-55410 can bind SARS-CoV-2 S1 protein (ACROBiosystems

S1N-C52H4); the affinity constant is 4.42 nM by ForteBio Octet Red96e (Figure 6).

Reconstitution:

NR-55410 should be reconstituted with 100 µL sterile deionized water to a stock solution of 1 mg per mL. Add water at room temperature with occasional gentle mixing. Carrier protein [e.g., 0.1% (w/v) bovine serum albumin] must be included in the reconstitution buffer if the final protein concentration is lower than recommended or NR-55410 is aliquoted to less than 10 µg per vial. Note: Avoid vigorous shaking or vortexing.

Storage of Reconstituted Antibody:

Reconstituted NR-55410 should be stored at -70°C or colder immediately and used within 3 months. Avoid repeated freeze-thaw cycles.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: Monoclonal Anti-SARS-Related Coronavirus 2 Spike Glycoprotein Receptor Binding Domain (RBD), Chimeric Potent Neutralizing Antibody (produced *in vitro*), NR-55410.”

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

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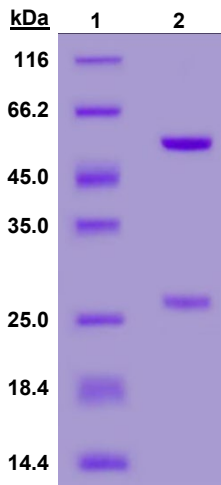
References:

1. Chen, J., Personal Communication.

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Figure 1: Representative SDS-PAGE



Lane 1: MW ladder
Lane 2: NR-55410

Figure 2: Representative Neutralization Assay

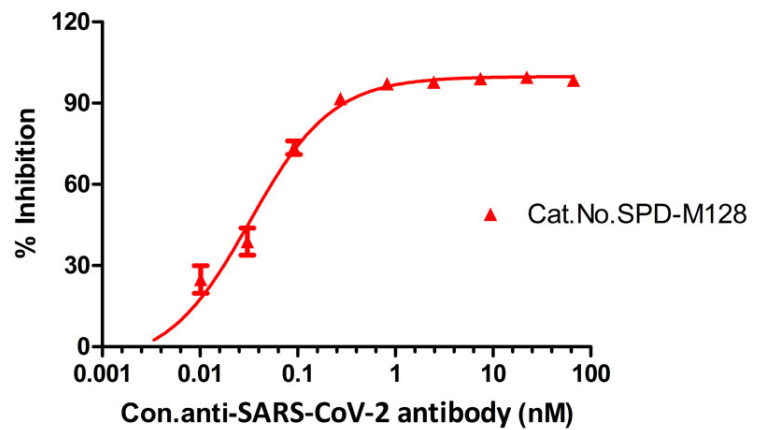


Figure 3: Representative ELISA

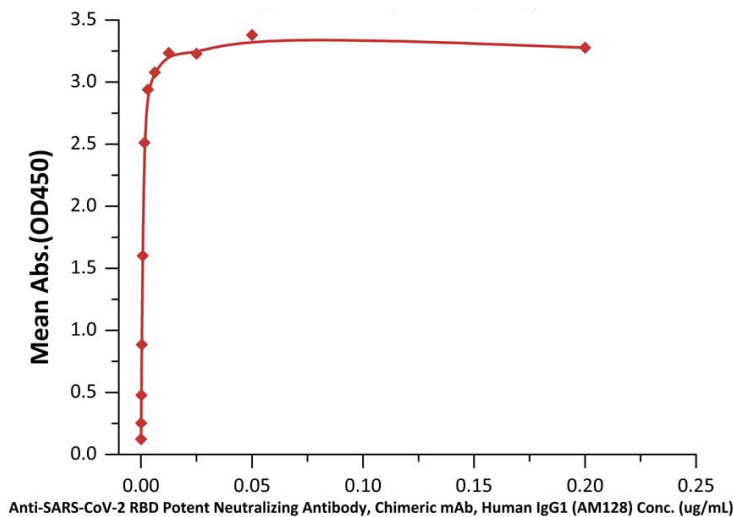


Figure 4: Representative Dose-Response

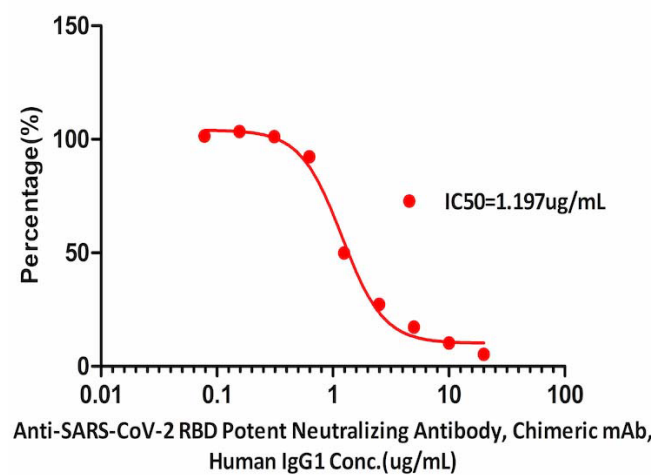


Figure 5: Representative Dose-Response

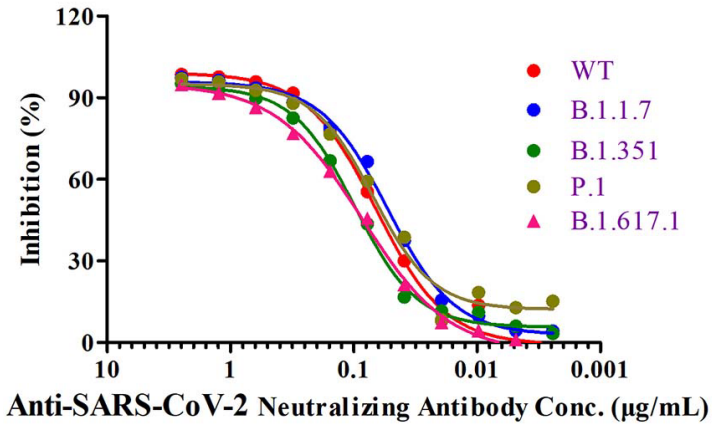


Figure 6: Representative Bioactivity

