Monoclonal Anti-SARS-Related Coronavirus 2 Spike Glycoprotein RBD-mFc Fusion Protein (produced *in vitro*)

Catalog No. NR-53795
Sino Biological Catalog No. 40592-R001

For research use only. Not for use in humans.

Contributor and Manufacturer:
Sino Biological, Wayne, Pennsylvania, USA

Product Description:
Antibody Class: IgG
Clone: 001
NR-53795 is a recombinant rabbit monoclonal antibody prepared against the fusion protein containing severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2) spike (S) glycoprotein receptor binding domain (RBD) (R319 to F541) and mouse IgG Fc (mFc) domain (Sino Biological 40592-V05H) that was expressed in HEK293 cells and purified.[1]

Material Provided:
Each vial of NR-53795 contains approximately 50 µg of purified monoclonal antibody in buffer. The concentration, expressed as mg per mL, and buffer composition are shown on the Certificate of Analysis.

Packaging/Storage:
NR-53795 was packaged aseptically in screw-capped plastic vials and is provided frozen on dry ice. The product should be stored at -20°C to -80°C immediately upon arrival. NR-53795 can be stored at 2°C to 8°C for one month without detectable loss of activity. Freeze-thaw cycles should be avoided.

Functional Activity:
NR-53795 is specific to the SARS-CoV-2 spike RBD as shown in ELISA (Figure 1), with cross reactivity to the SARS-CoV-2 spike S1 protein (Sino Biological 40591-V08B1). No cross reactivity was observed in ELISA with S1 glycoproteins from SARS-CoV, MERS-CoV, HCoV-HKU1 (isolates N1 and N5), HCoV-NL63, HCoV-229E or HCoV-OC43. The biological activity of NR-53795 was measured by its binding ability using biosensor analysis (Figure 2), in which biotinylated recombinant SARS-CoV-2 S RBD recombinant protein (His tag) (Sino Biological 40592-V08B-B) can bind NR-53795; the affinity constant is 0.006 nM.[1] SARS-CoV-2 Inhibitor Screening ELISA Kit (Sino Biological KIT001) detected serial dilutions of NR-53795; the IC_{50} is 0.59 nM (Figure 3). NR-53795 is functional in microneutralization *in vitro* using 293T-ACE2 cells infected with SARS-CoV-2 spike pseudovirus with an IC_{50} of 0.11 µg per mL.

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Monoclonal Anti-SARS-Related Coronavirus 2 Spike Glycoprotein RBD-mFc Fusion Protein (produced *in vitro*), NR-53795."

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/bmbl5/index.htm.

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References:
1. Lu, Z., Personal Communication.

Support Provided by NIAID

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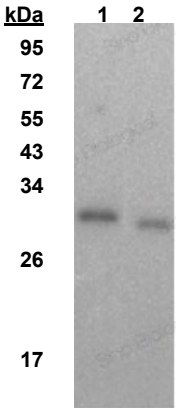
Figure 1: Representative Anti-SARS-CoV-2 Western Blot



Lane 1: SARS-CoV Spike RBD protein (30 ng)
Lane 2: SARS-CoV-2 Spike RBD His recombinant protein (30 ng)

Figure 2: Representative Biosensor Analysis

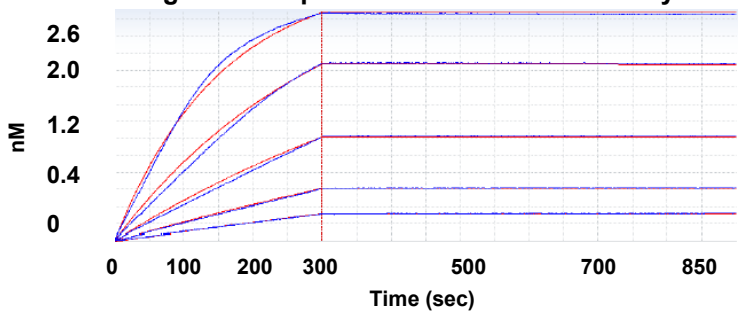
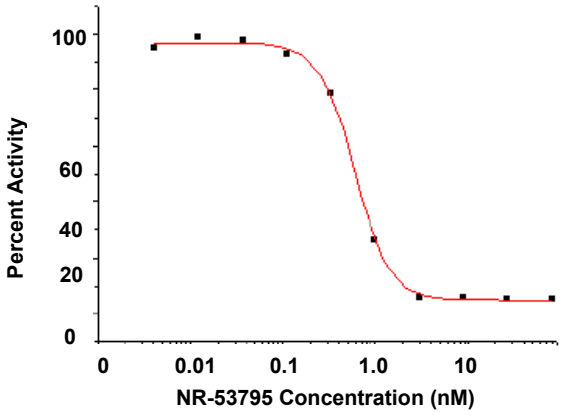


Figure 3: Representative Inhibitor Screening by ELISA Assay



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