Product Information Sheet for NR-56465

Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, B.1.1.529 (Omicron) with C-Terminal Histidine Tag, Recombinant from HEK293 Cells

Catalog No. NR-56465
Sino Biological Catalog No. 40592-V08H121

For research use only. Not for use in humans.

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

Product Description:
A recombinant form of the spike glycoprotein receptor binding domain (RBD) from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), B.1.1.529 (Omicron), which originated in South Africa, was produced by transfection in human embryonic kidney HEK293 cells and purified.[1] The RBD (amino acid residues R319 to F541 according to the numbering of GenPept: YP_009724390), contains the following mutations: G339D, S371L, S373P, S375F, K417N, N440K, G446S, S477N, T478K, E484A, Q493R, G496S, Q498R, N501Y and Y505H, and features a C-terminal poly-histidine tag.[1] NR-56465 consists of 234 amino acids and has a theoretical molecular weight of 26,830 daltons. The predicted protein sequence is shown in Figure 1. As a result of glycosylation, it migrates as an approximately 32.86 kDa band in SDS-PAGE under reducing conditions.[1] Representative SDS-PAGE and ELISA results are shown in Figures 2 and 3.[1]

Material Provided:
Each vial contains approximately 50 µg of purified recombinant protein in sterile phosphate buffered saline (PBS, pH 7.4). The concentration, expressed as mg/mL, is shown on the Certificate of Analysis.

Packaging/Storage:
NR-56465 was packaged aseptically in cryovials. The product is provided on dry ice and should be stored under sterile conditions at -20°C to -80°C immediately upon arrival. It is recommended that the protein be aliquoted for optimal storage.[1] Freeze-thaw cycles should be avoided.

Functional Activity:
The biological activity of NR-56465 was measured by its binding ability in a functional ELISA (Figure 2), in which immobilized human ACE2 protein (Fc tag) (Sino Biological 10108-H05H) (100 µL/well) can bind NR-56465; the half maximal effective concentration (EC_{50}) of NR-56465 is 13.7 ng/mL.[1]

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, B.1.1.529 (Omicron) with C-Terminal Histidine Tag, Recombinant from HEK293 Cells, NR-56465."

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.

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

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Figure 1: Predicted Protein Sequence

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1     RVQPTESIVR FPNITNLCPF DEVFNATRFA SVYAWNRKRI SNCVADYSVL
51    YNLAPFFTFK CYGVSPTKLN DLCFTNVYAD SFVIRGDEVR QIAPGQTGNI
101   ADYNYKLPDD FTGCVIAWNS NKLDSKVSGN YNYLYRLFRK SNLKPFERDI
151   STEIYQAGNK PCNGVAGFNC YFPLRSYSFR PTYGVGHQPY RVVVLSFELL
201   HAPATVCGPK KSTNLVKNKC VNFAHHHHHH HHHH
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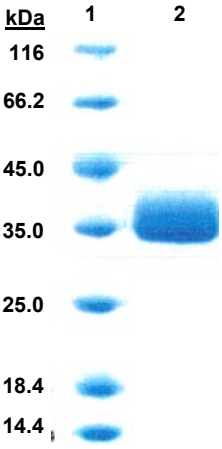
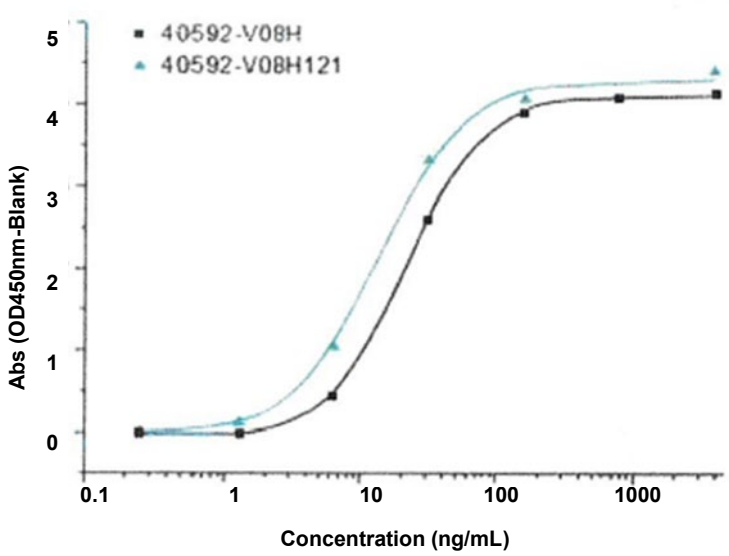
RBD – **Residues 1 to 223** (represents WT amino acid residues 319 to 541)
Plasmid derived amino acid – residue 224
Poly-histidine tag – Residues 225 to 234
Mutations are underlined
The mutations shown are G339D, S371L, S373P, S375F, K417N, N440K, G446S, S477N, T478K, E484A, Q493R, G496S, Q498R, N501Y, Y505H (numbering according to GenPept: YP_009724390) –
Residues 21, 53, 55, 57, 99, 122, 128, 159, 160, 166, 175, 178, 180, 183, 187.

Figure 2: Representative SDS-PAGE



Lane 1: MW ladder
Lane 2: NR-56465

Figure 3: Representative Functional ELISA



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