

Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, R408I Variant with C-Terminal Histidine Tag, Recombinant from HEK293 Cells

Catalog No. NR-55399
ACROBiosystems Catalog No. SPD-S52H8

For research use only. Not for use in humans.

Contributor and Manufacturer:
ACROBiosystems, Newark, Delaware, USA

Product Description:

A recombinant form of the spike (S) glycoprotein receptor binding domain (RBD) from severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), R408I variant was produced in human embryonic kidney HEK293 cells and purified by affinity chromatography.¹ NR-55399 lacks the signal sequence, contains 223 residues of the SARS-CoV-2 S glycoprotein RBD (amino acid residues R319 to F541) and features a C-terminal poly-histidine tag. NR-55399 is from a variant of SARS-CoV-2 which contains the R408I mutation in the S glycoprotein as compared to the SARS-CoV-2 reference sequence (GenPept: [QHD43416](#)).^{1,2} NR-55399 has a theoretical molecular weight of 27,000 daltons. The predicted protein sequence is shown in Figure 1.

Material Provided:

Each vial contains approximately 100 µg of purified recombinant protein lyophilized in phosphate-buffered saline, pH 7.4 and 10% trehalose.

Packaging/Storage:

NR-55399 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-55399 is functional in ELISA and binding assays. The biological activity of NR-55399 was measured by its binding ability in a functional ELISA in which immobilized human ACE2 protein (Fc tag) (ACROBiosystems AC2-H5257) at 2 µg/mL (100 µL/well) can bind NR-55399; the linear range is 0.5 to 8 ng/mL.¹

Reconstitution:

NR-55399 should be reconstituted with 167 µL sterile deionized water to a stock solution of 600 µg/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-55399 is

aliquoted to less than 10 µg per vial. Note: Avoid vigorous shaking or vortexing.

Storage of Reconstituted Protein:

Reconstituted NR-55399 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: Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, R408I Variant with C-Terminal Histidine Tag, Recombinant from HEK293 Cells, NR-55399.”

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 \(BMBL\)](#), 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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References:

1. Chen, J., Personal Communication.
2. Wu, F., et al. "A New Coronavirus Associated with Human Respiratory Disease in China." *Nature* 579 (2020): 265-269. PubMed: 32015508.

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Figure 1: Predicted Protein Sequence

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1      RVQPTESIVR FPNITNLCPF GEVFNATRFA SVYAWNKRRI SNCVADYSVL
51     YNSASFSTFK CYGVSPTKLN DLCFTNVYAD SFVIRGDEVI QIAPGQTGKI
101    ADYNYKLPDD FTGCVIAWNS NNLDKVGGN YNYLYRLFRK SNLKPFERDI
151    STEIQAGST PCNGVEGFNC YFPLQSYGFQ PTNGVGYQPY RVVVLSFELL
201    HAPATVCGPK KSTNLVKNKC VNFGGGSGGG SHHHHHHHHH H
    
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S protein RBD – Residues 1 to 223 [(represents amino acid residues of the native S protein (GenPept: [QHD43416](#))]

R408I mutation – **Residue 90**

Linker – Residues 224 to 231

Poly-histidine tag – Residues 232 to 241