

# Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, Wuhan-Hu-1 with C-Terminal Histidine Tag, Recombinant from HEK293 Cells

## Catalog No. NR-56133

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### Contributor:

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### Manufacturer:

UGA Bioexpression and Fermentation Facility

### 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), Wuhan-Hu-1 (GenPept: [QHD43416](#)) was produced by transient transfection into human embryonic kidney HEK293 cells and purified by immobilized metal affinity chromatography.<sup>1,2</sup> NR-56133 lacks the signal sequence and contains 223 residues (ectodomain) of the SARS-CoV-2 spike glycoprotein RBD; the recombinant protein includes a C-terminal hexahistidine tag. The predicted protein sequence is shown in Figure 1.<sup>1</sup> NR-56133 has a theoretical molecular weight of 25.9 kilodaltons.

The S glycoprotein mediates viral binding to the host angiotensin converting enzyme 2 (ACE2). This protein forms a trimer, and when bound to a host receptor allows fusion of the viral and cellular membranes. The S protein is a target for neutralizing antibodies.<sup>3</sup>

### Material Provided:

Each vial contains approximately 100 µL of NR-56133 in phosphate buffered saline (PBS). The concentration, expressed as milligrams per milliliter, is shown on the Certificate of Analysis.

### Packaging/Storage:

NR-56133 was packaged aseptically in cryovials. The product is provided on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be avoided.

### Citation:

Acknowledgment for publications should read "The following reagent was produced under HHSN272201400008C and HHSN272201400004C, and obtained through BEI Resources, NIAID, NIH: Spike Glycoprotein Receptor Binding Domain (RBD) from SARS-Related Coronavirus 2, Wuhan-Hu-1 with C-Terminal Histidine Tag, Recombinant from HEK293 Cells, NR-56133."

### 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](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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### References:

1. Krammer, F., Personal Communication.

2. Wu, F., et al. "A New Coronavirus Associated with Human Respiratory Disease in China." Nature 579 (2020): 265-269. PubMed: 32015508.
3. Hulswit, R. J. G., C. A. M. de Haan and B.-J. Bosch. "Coronavirus Spike Protein and Tropism Changes." Adv. Virus Res. 96 (2016): 29-57. PubMed: 27712627.

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**Figure 1: Predicted Protein Sequence**

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1  RVQPTESIVR FPNITNLCPF GEVFNATRFA SVYAWNKRRI SNCVADYSVL
51  YNSASFSTFK CYGVSPTKLN DLCFTNVYAD SFVIRGDEV R QIAPGQTGKI
101 ADYNYKLPDD FTGCVIAWNS NNLD SKVGGN YNYLYRLFRK SNLKPFERDI
151 STEIYQAGST PCNGVEGFNC YFPLQSYGFQ PTNGVGYQPY RVVVL SFELL
201 HAPATVCGPK KSTNLVKNK C VNF HHHHHH

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RBD – **Residues 1 to 223** (representing WT residues 319 to 541)  
Hexa-histidine tag– Residues 224 to 229