

Recombinant SARS-CoV-2 (N439K Mutant) Spike Glycoprotein (S1), sFc-tagged

Cat. No. HUM-350 **Lot. No.** (See product label)

SPECIFICATION

Product Overview

SARS-CoV-2 N439K mutant spike subunit 1 protein is a recombinant protein manufactured to high purity in HEK293 cells. N439K mutations occur in the RBD region, increase binding affinity to ACE2, and have been shown to escape the neutralising effect of a few monoclonal antibodies (mAbs). SARS-CoV-2, previously known as the 2019 Novel Coronavirus (2019-nCoV), causes the pandemic COVID-19 disease.

Tag

sheep Fc

Background

Coronaviruses have a large genome and encode a 3'-to-5'-exoribonuclease that permits high-fidelity replication and a range of tolerated variation by the viral RNA-dependent RNA polymerase (Denison et al., 2011). This coronavirus exonuclease extends the coronavirus genome size through preventing lethal mutagenesis imposed by error rates of viral RNA polymerase (Smith et al., 2014). Therefore, SARS-CoV-2 could acquire rare but favorable mutations with fitness advantages and immunological resistance due to natural selection (Grubaugh et al., 2020) and a number of mutations to the SARS-CoV-2 genome have been observed throughout the COVID-19 pandemic (Erol, 2021).

N439K first emerged in Scotland in March 2020 in a lineage that is no longer circulating (B.1.141), but has since been introduced into the UK on multiple occasions (in lineage B.1.258). This is now circulating in many European countries and internationally. There is no evidence for a faster rate of growth for the 439K variant beyond that already determined for the D614G mutation which is also found in all

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variants carrying 439K. N439K enhances binding affinity to the ACE2 receptor and is able to escape the neutralising activity of some mAbs, including one in clinical trials, and from some antibodies present in sera from a large fraction of people that recovered from infection. No increased disease severity has been observed and no evidence that this mutation will allow the virus to escape immunity triggered by vaccines (COG-UK, 2020).

Formulation

DPBS

Notes

This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.

Type

Recombinant

ClassID 1

Infectious Disease

GENE INFORMATION**Synonyms**

SARS-CoV-2 (N439K Mutant) Spike Glycoprotein (S1)

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