



## Synonym

Spike, S protein, Spike glycoprotein, S glycoprotein

## Source

SARS-CoV-2 Spike Trimer, His Tag (BA.1/Omicron) (SPN-C522a) is expressed from human 293 cells (HEK293). The spike mutations are identified on the SARS-CoV-2 Omicron variant (Pango lineage: BA.1; GISAID clade: GRA). The recombinant protein is expressed from human 293 cells (HEK293) with T4 fibritin trimerization motif and a polyhistidine tag at the C-terminus. Proline substitutions (F817P, A892P, A899P, A942P, K986P, V987P) and alanine substitutions (R683A and R685A) are introduced to stabilize the trimeric prefusion state of SARS-CoV-2 S protein and abolish the furin cleavage site, respectively.

## Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 138.2 kDa. The protein migrates as 160-190 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

## Endotoxin

Less than 1.0 EU per  $\mu$ g by the LAL method / rFC method.

## Purity

>95% as determined by SDS-PAGE.

## Formulation

Supplied as 0.2  $\mu$ m filtered solution in 0.1 M Sodium citrate, pH5.5.

Contact us for customized product form or formulation.

## Shipping

*This product is supplied and shipped with dry ice, please inquire the shipping cost.*

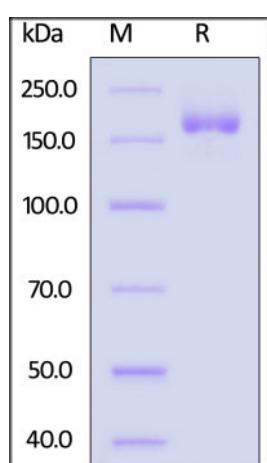
## Storage

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

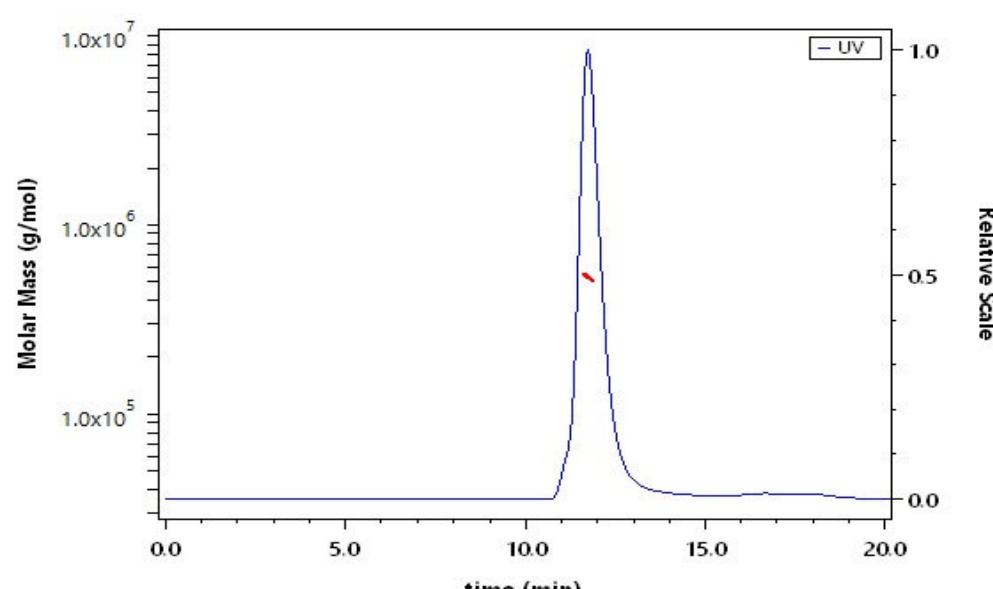
- The product MUST be stored at -70°C or lower upon receipt;
- -70°C for 3 months under sterile conditions.

## SDS-PAGE



SARS-CoV-2 Spike Trimer, His Tag (BA.1/Omicron) on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

## SEC-MALS



The purity of SARS-CoV-2 Spike Trimer, His Tag (BA.1/Omicron) (Cat. No. SPN-C522a) is more than 85% and the molecular weight of this protein is around 500-550 kDa verified by SEC-MALS.

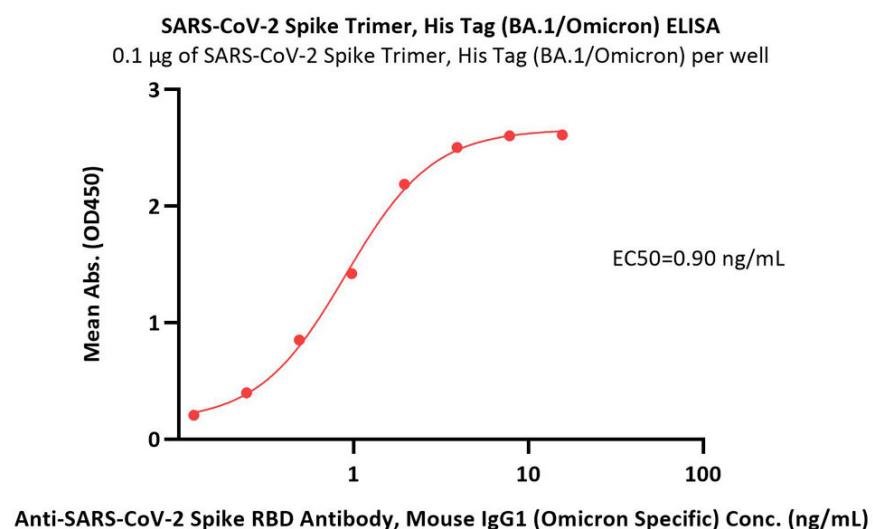
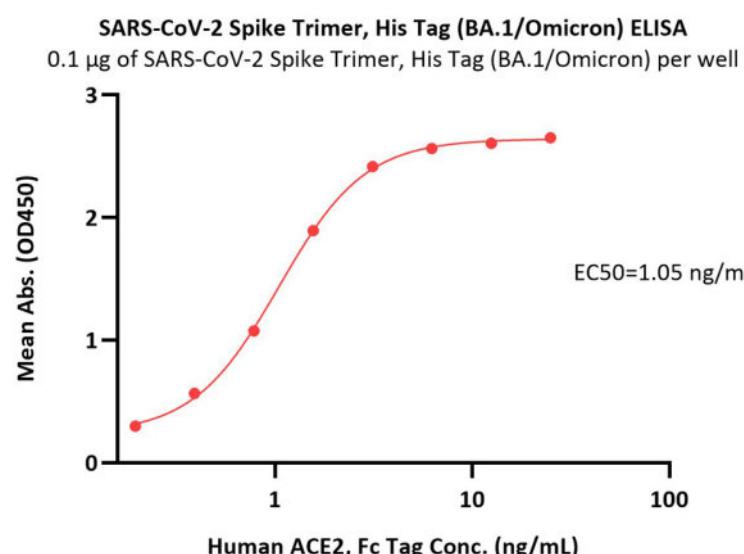
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## Bioactivity-ELISA

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Immobilized SARS-CoV-2 Spike Trimer, His Tag (BA.1/Omicron) (Cat. No. SPN-C522a) at 1 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.2-6 ng/mL (QC tested).

Immobilized SARS-CoV-2 Spike Trimer, His Tag (BA.1/Omicron) (Cat. No. SPN-C522a) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Spike RBD Antibody, Mouse IgG1 (Omicron Specific) (Cat. No. SPD-M305) with a linear range of 0.1-4 ng/mL (Routinely tested).

## Background

It's been reported that SARS-CoV-2 can infect the human respiratory epithelial cells through interaction with the human ACE2 receptor. The spike protein is a large type I transmembrane protein containing two subunits, S1 and S2. S1 mainly contains a receptor binding domain (RBD), which is responsible for recognizing the cell surface receptor. S2 contains basic elements needed for the membrane fusion. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity.

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