



## Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

## Source

Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (SPN-C82Ey) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Pro 1213 (Accession # [QHD43416.1](#)) (T19I, LPP24-26del, A27S, HV69-70del, G142D, V213G, G339D, R346T, S371F, S373P, S375F, T376A, D405N, R408S, K417N, N440K, K444T, L452R, N460K, S477N, T478K, E484A, F486V, Q498R, N501Y, Y505H, D614G, H655Y, N679K, P681H, N764K, D796Y, Q954H, N969). The spike mutations are identified on the SARS-CoV-2 Omicron variant (Pango lineage: BQ.1.1). 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.

Predicted N-terminus: Val 16

## Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 139.4 kDa. The protein migrates as 170-200 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

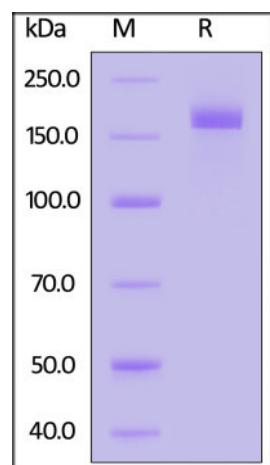
## Labeling

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

## Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

## SDS-PAGE



Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

## Purity

>95% as determined by SDS-PAGE.

>95% as determined by SEC-MALS.

## Formulation

Lyophilized from 0.22 µm filtered solution in 0.1 M Sodium citrate, pH5.5 with trehalose as protectant.

Contact us for customized product form or formulation.

## Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

## Storage

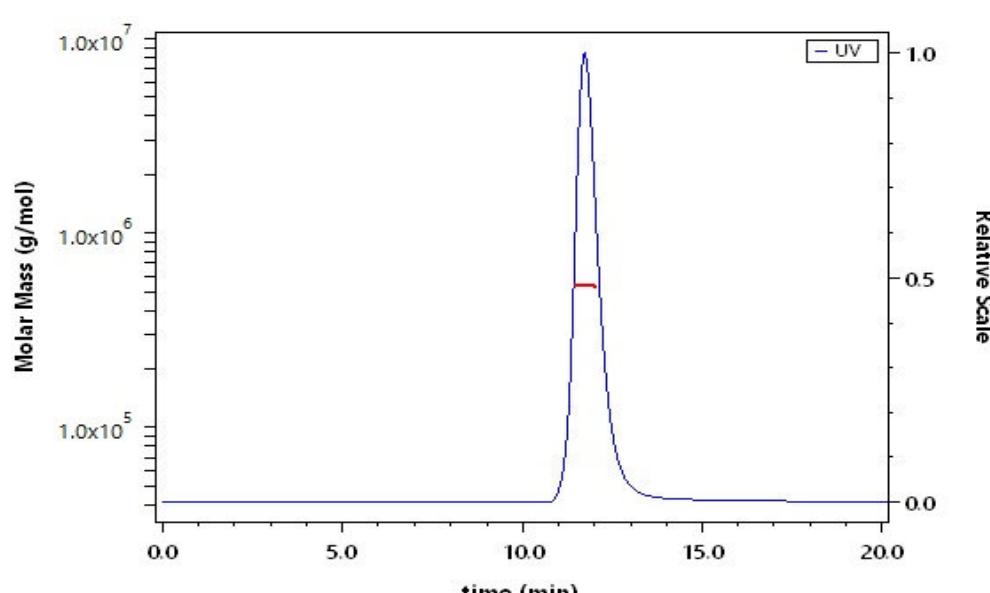
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

## SEC-MALS



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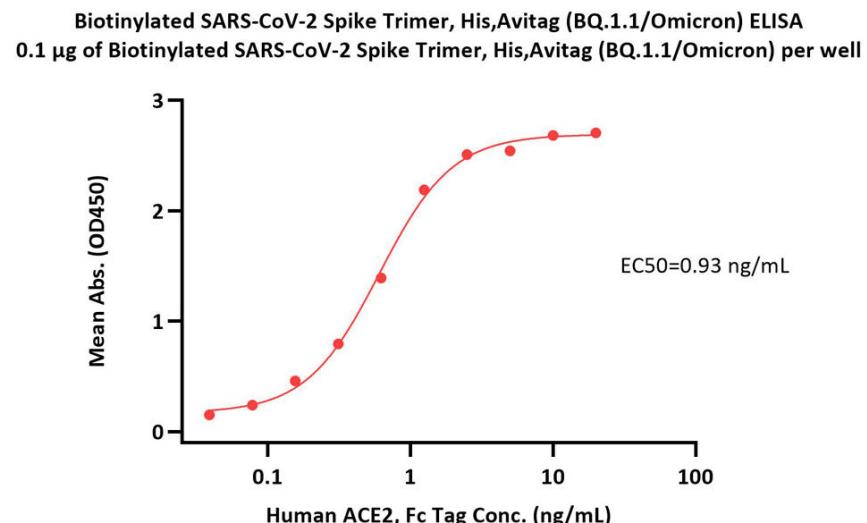
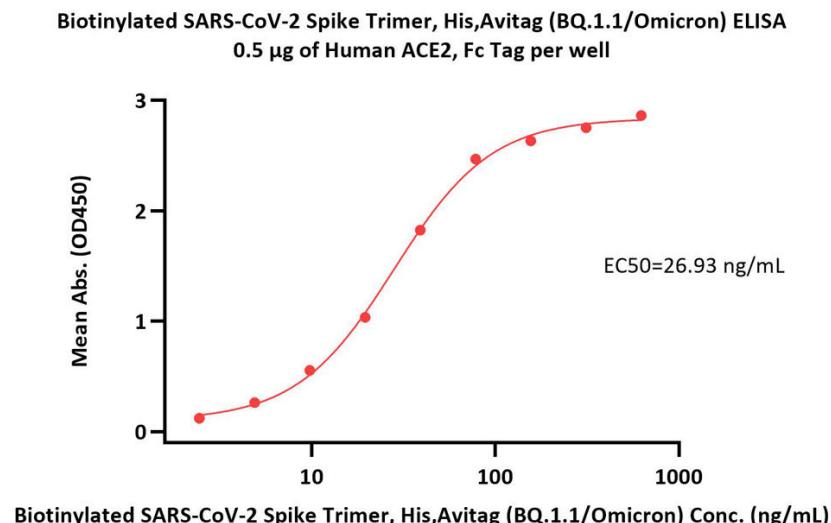


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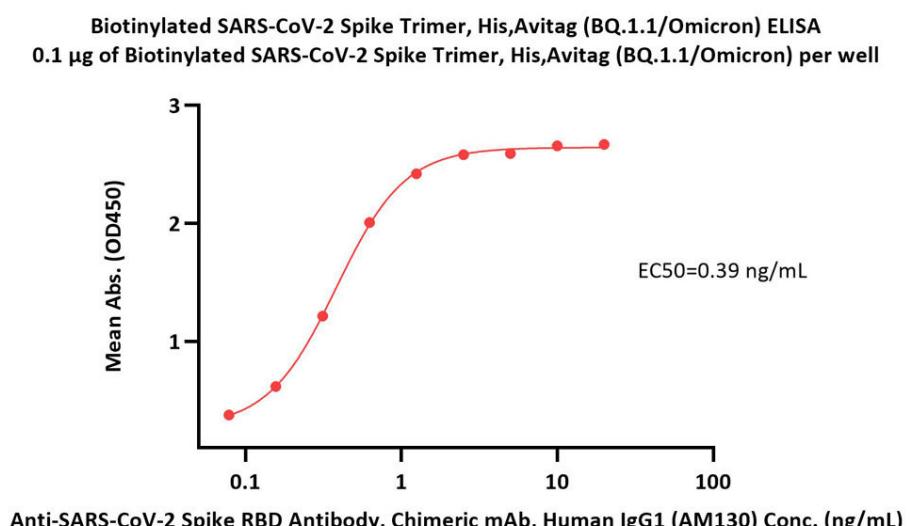
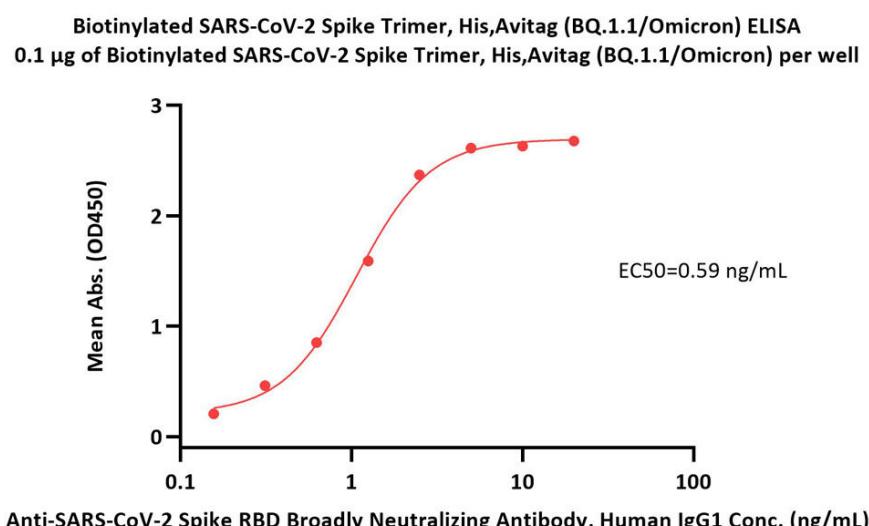
The purity of Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (Cat. No. SPN-C82Ey) is more than 95% and the molecular weight of this protein is around 525-570 kDa verified by SEC-MALS. [Report](#)

## Bioactivity-ELISA



Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 5 µg/mL (100 µL/well) can bind Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (Cat. No. SPN-C82Ey) with a linear range of 2-78 ng/mL (QC tested).

Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (Cat. No. SPN-C82Ey) at 1 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.1-1 ng/mL (Routinely tested).



Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (Cat. No. SPN-C82Ey) at 1 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Anti-SARS-CoV-2 Spike RBD Broadly Neutralizing Antibody, Human IgG1 (Cat. No. SPD-M265) with a linear range of 0.2-3 ng/mL (Routinely tested).

Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (BQ.1.1/Omicron) (Cat. No. SPN-C82Ey) at 1 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Anti-SARS-CoV-2 Spike RBD Antibody, Chimeric mAb, Human IgG1 (AM130) (Cat. No. S1N-M13A1) with a linear range of 0.1-1 ng/mL (Routinely tested).

## Background

It's been reported that coronavirus 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

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# Biotinylated SARS-CoV-2 Spike Trimer Protein, His,Avitag™ (BQ.1.1/Omicron) (MALS verified)

Catalog # SPN-C82Ey



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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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