

## SARS-COV-2 Spike S1 Protein (hFc & Avi)

### General Information

Synonyms:	Spike protein S1;S glycoprotein Subunit1;S1 protein;Spike,S1 protein
Protein Construction:	Gln14-Arg683
Species:	SARS-CoV-2
Expression Host:	HEK293 Cells
Accession:	A0A6G7K2L4
Molecular Weight:	102.6 kDa (predicted). Due to glycosylation, the protein migrates to 130-140 kDa based on Tris-Bis PAGE result.

### QC Testing

Biological Activity:	<ol style="list-style-type: none"><li>1. Immobilized Human ACE2, His Tag at 5µg/ml (100µl/well) on the plate. Dose response curve for SARS-COV-2 Spike S1, hFc Tag with the EC50 of 92.3ng/ml determined by ELISA.</li><li>2. SARS-COV-2 Spike S1, hFc Tag captured on CM5 Chip via Protein A can bind Human ACE2, His Tag with an affinity constant of 3.80 nM as determined in SPR assay.</li></ol>
Purity:	> 95% as determined by Tris-Bis PAGE; > 95% as determined by HPLC
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS (pH 7.4). Typically, 8% trehalose is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 µg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

*Actual storage temperature shall be subject to the COA.*

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

The spike protein (S) of coronavirus (CoV) attaches the virus to its cellular receptor, angiotensin-converting enzyme 2 (ACE2). A defined receptor-binding domain (RBD) on S mediates this interaction. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity.

Reference

Belouzard S, et al. Activation Of The Sars Coronavirus Spike Protein Via Sequential Proteolytic Cleavage At Two Distinct Sites[J]. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106(14): 5871-5876.

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