

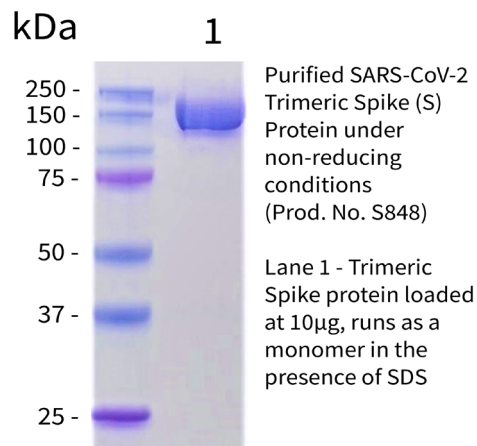
SARS-CoV-2 Trimeric Spike (S) Protein

Recombinant Protein

Product Information

Product No.: S848

Storage: 2° to 8°C



Product Description

Background:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), is an enveloped, single-stranded, positive-sense RNA virus that belongs to the Coronaviridae family 1. The SARS-CoV-2 genome, which shares 79.6% identity with SARS-CoV, encodes four essential structural proteins: the spike (S), envelope (E), membrane (M), and nucleocapsid protein (N) 2. The S protein is a transmembrane, homotrimeric, class I fusion glycoprotein that mediates viral attachment, fusion, and entry into host cells 3. Each ~180 kDa monomer contains two functional subunits, S1 (~700 a.a) and S2 (~600 a.a), that mediate viral attachment and membrane fusion, respectively. S1 contains two major domains, the N-terminal (NTD) and C-terminal domains (CTD). The CTD contains the receptor-binding domain (RBD), which binds to the angiotensin-converting enzyme 2 (ACE2) receptor on host cells 3-5. Although both SARS-CoV and SARS-CoV-2 bind the ACE2 receptor, the RBDs only share ~73% amino acid identity, and the SARS-CoV-2 RBD binds with a higher affinity compared to SARS-CoV 3, 6. The RBD is dynamic and undergoes hinge-like conformational changes, referred to as the “down” or “up” conformations, which hide or expose the receptor-binding motifs, respectively 7. Following receptor binding, S1 destabilizes, and TMPRSS2 cleaves S2, which undergoes a pre- to post-fusion conformation transition, allowing for membrane fusion 8, 9. The S protein has been the main focus of therapeutic and vaccine design as it is highly immunogenic. Both neutralizing antibodies 10,11 and memory T cells 12,13 targeting the S protein are present in the sera of convalescent COVID-19 patients.

Known Reactivity Species:

SARS-CoV-2, Virus

Expression Host:

HEK-293 Cells

Format:

Purified No Carrier Protein

Formulation

This recombinant protein is aseptically packaged and formulated in 0.01 M phosphate buffered saline (PBS) pH 7.2 - 7.4, 150 mM NaCl with no carrier protein, potassium, calcium or preservatives added.

Purity

>95% by SDS Page

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

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Endotoxin

<0.10 EU per 1 µg of the protein by the LAL method

Storage and Stability

This recombinant protein may be stored as received at 2° to 8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at -80°C.

Avoid Repeated Freeze Thaw Cycles.

Applications

Applications and Recommended Usage (Quality Tested By Leinco):

ELISA

Country of Origin

USA

References

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