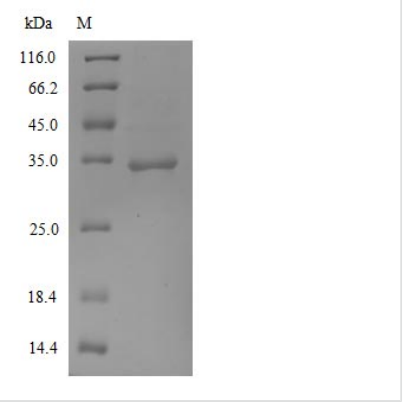
Recombinant Severe acute respiratory syndrome coronavirus 2 Spike glycoprotein (S) (K417N), partial

Product Code	CSB-MP3324GMY1(M7)
Abbreviation	Recombinant SARS-CoV-2 S protein (K417N), partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P0DTC2
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol.If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Severe acute respiratory syndrome coronavirus 2 (2019-nCoV) (SARS-CoV-2)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	RVQPTESIVRFPNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLYNSA SFSTFKCYGVSPTKLNDLCFTNVYADSFVIRGDEVRQIAPGQTGNIADYNYKLP DDFTGCVIAWNSNNLDSKVGGNYNYLYRLFRKSNLKPFERDISTEIYQAGSTP CNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFELLHAPATVCGPKKST NLVKNKCVNF
Research Area	Microbiology
Source	Mammalian cell
Target Names	S
Expression Region	319-541aa(K417N)
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	27.8 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Severe acute respiratory syndrome coronavirus 2 Spike glycoprotein (S) (K417N) is expressed in mammalian cells and comes with a C-terminal 10xHis tag for straightforward purification. This product contains the amino acid region 319-541 with the K417N mutation, supplied as a partial protein. SDS-PAGE analysis confirms purity levels above 90%, while endotoxin levels remain below 1.0 EU/ug, making it suitable for sensitive research applications.

The Spike glycoprotein (S) of SARS-CoV-2 appears to play a central role in how the virus enters host cells by helping with attachment and fusion processes. It's become a major focus for researchers studying viral pathogenesis and vaccine development. Understanding how the Spike protein works structurally and functionally may be essential for creating effective therapeutic strategies against COVID-19.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Antibody Development and Characterization Studies

This recombinant SARS-CoV-2 Spike protein fragment with the K417N mutation could work as either an immunogen or screening antigen when developing monoclonal antibodies that target this particular variant. The C-terminal His-tag allows for protein purification and immobilization in ELISA-based antibody screening assays. Scientists might find this protein useful for testing whether existing antibodies show cross-reactivity against the K417N variant when compared to wild-type Spike protein. High purity levels (>90%) and low endotoxin content suggest it's appropriate for immunization protocols in laboratory animals.

2. Protein-Protein Interaction Studies

The receptor-binding domain region (amino acids 319-541) includes critical

areas that appear to be involved in ACE2 receptor binding. This makes the protein potentially valuable for studying how variant-specific binding interactions work. Pull-down assays become more manageable with the His-tag, allowing researchers to investigate binding partners and characterize binding kinetics through surface plasmon resonance or similar biophysical techniques. Scientists can compare how the K417N mutant interacts versus wild-type protein, which may reveal how this mutation affects molecular recognition events.

3. Structural and Biophysical Characterization

This purified protein fragment might prove useful for structural studies aimed at understanding what conformational effects the K417N mutation has within the receptor-binding domain context. Mammalian expression systems tend to preserve proper protein folding and post-translational modifications that are likely relevant to native viral protein structure. Techniques like circular dichroism spectroscopy, dynamic light scattering, or crystallography could help characterize the structural properties of this variant compared to reference proteins.

4. Vaccine Research and Immunogenicity Studies

The recombinant protein appears suitable as a research tool for evaluating immune responses to the K417N variant in preclinical vaccine development studies. Scientists might find it helpful for assessing how broadly immune recognition works and for comparing immunogenic profiles between different Spike variants. Low endotoxin content and high purity levels suggest it's appropriate for controlled immunological studies in laboratory settings, potentially helping researchers understand variant-specific immune responses.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.