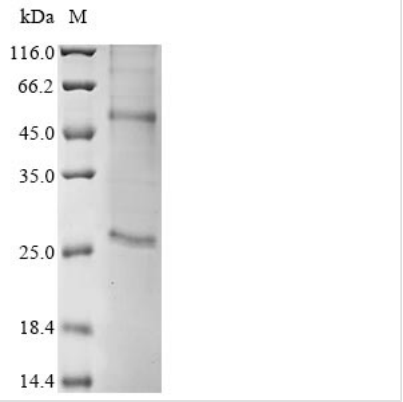
Recombinant Human coronavirus NL63 Membrane protein (M)

Product Code	CSB-CF757672HIX
Abbreviation	Recombinant Human coronavirus NL63 Membrane protein
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.	Q6Q1R9
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	Human coronavirus NL63 (HCoV-NL63)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MSNSSVPLLEVYVHLRNWNFSWNLILTLFIVVLQYGHYKYSRLLYGLKMSVLW CLWPLVLALSIFDCFVNFNVDWVFFGFSILMSIITLCLWVMYFVNSFRLWRRVK TFWAFNPETNAIISLQVYGHNYYLPVMAAPTGVTLTLLSGVLLVDGHKIATRVQ VGQLPKYVIVATPSTTIVCDRVGRSVNETSQTGWAFYVRAKHGDFSGVASQE GVLSEREKLLHLI
Research Area	Immunology
Source	in vitro E.coli expression system
Target Names	M
Expression Region	1-226aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	28.7kDa
Protein Length	Full Length
Image	



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

Description

This recombinant Human coronavirus NL63 Membrane protein (M) is produced through an in vitro E.coli expression system, yielding a full-length protein of 226 amino acids. The protein carries an N-terminal 10xHis tag, which helps with purification and detection processes. SDS-PAGE analysis confirms a purity exceeding 85%, making it well-suited for various research applications in viral protein studies.

The Membrane protein (M) of Human coronavirus NL63 appears to be a crucial component of the viral envelope. It likely plays a fundamental role in virus assembly and morphogenesis. As an integral membrane protein, it interacts with other structural proteins and contributes to viral particle formation. Understanding the M protein's structure and function may be essential for advancing coronavirus biology research and developing therapeutic strategies.

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

This recombinant HCoV-NL63 membrane protein could serve as an immunogen for generating polyclonal or monoclonal antibodies specific to the viral M protein. The N-terminal His-tag streamlines purification and immobilization for immunization protocols and subsequent antibody screening assays. Researchers might use this protein in ELISA-based assays to characterize antibody binding specificity and affinity. The complete protein sequence (1-226aa) offers comprehensive epitope coverage for antibody development targeting various regions of the M protein.

2. Protein-Protein Interaction Studies

The His-tagged M protein can be applied in pull-down assays to identify and characterize potential cellular or viral protein binding partners. The tag allows efficient immobilization on nickel-affinity matrices for capturing interacting

proteins from cell lysates or purified protein libraries. This approach may help reveal the molecular mechanisms behind HCoV-NL63 membrane protein function and its role in viral assembly or host cell interactions. The 85% purity level appears sufficient for these interaction studies while reducing interference from contaminating proteins.

3. Biochemical Characterization and Stability Studies

This recombinant protein can be applied for comprehensive biochemical analysis, including molecular weight determination, thermal stability profiling, and chemical cross-linking studies. Researchers might investigate the protein's behavior under different buffer conditions, pH ranges, and temperature gradients to understand its biophysical properties. The His-tag streamlines consistent purification for reproducible biochemical assays and allows tag-specific detection methods. These studies could provide fundamental insights into the structural stability and folding characteristics of the HCoV-NL63 membrane protein.

4. Immunoassay Development and Validation

The recombinant M protein serves as a valuable standard and control reagent for developing coronavirus detection immunoassays. The His-tag allows consistent immobilization on assay plates and provides a reliable detection handle for assay optimization. Researchers can apply this protein to establish standard curves, validate assay specificity, and optimize detection protocols for research applications. The defined protein concentration and purity make it suitable for quantitative immunoassay development and cross-reactivity studies with related coronavirus proteins.

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.