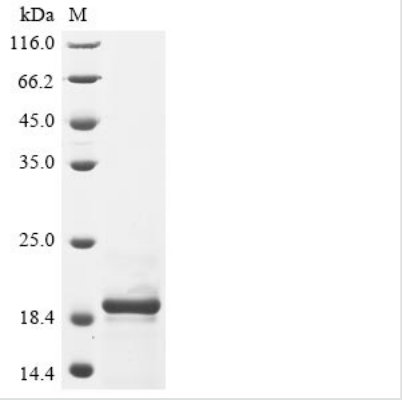
Recombinant Human coronavirus HKU1 Non-structural protein 4 (4)

Product Code	CSB-EP608711HIW
Abbreviation	Recombinant Human coronavirus HKU1 Non-structural protein 4
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.	Q0ZME6
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 HKU1 (isolate N5) (HCoV-HKU1)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MEVWRPSYKYSLITREFGVTDLEDLCFKYNYCQPCVGYCIVPLNVWCRKFGK FASYFVLRSHDTSHKNNFGVITSFTSYGNTVSEAVSKLVESASDFIAWRAEALN KYG
Research Area	others
Source	E.coli
Target Names	4
Expression Region	1-109aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	18.5 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Human coronavirus HKU1 Non-structural protein 4 is produced in E.coli and includes a full-length amino acid sequence from position 1 to 109. This protein features an N-terminal 6xHis tag for easy purification and detection. It has a purity exceeding 85%, as verified by SDS-PAGE analysis. This product is designed for research use only and is not intended for diagnostic or therapeutic applications.

Non-structural protein 4 (nsp4) of Human coronavirus HKU1 appears to play a crucial role in the virus's replication and assembly processes. It seems to be involved in forming the replication organelle, which is essential for viral genome replication. Research into nsp4 may provide valuable insights into coronavirus biology and potentially help in developing strategies to combat viral infections.

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. Viral Protein Interaction Studies

This recombinant HCoV-HKU1 non-structural protein 4 can be used to investigate protein-protein interactions within the viral replication complex or with host cell proteins. The N-terminal 6xHis tag makes pull-down assays and co-immunoprecipitation experiments possible to identify binding partners. Studies like these could provide insights into the molecular mechanisms of HCoV-HKU1 replication and pathogenesis. The purified protein works as a defined reagent for systematic interaction mapping experiments.

2. Antibody Development and Characterization

The recombinant protein can serve as an immunogen for generating polyclonal or monoclonal antibodies specific to HCoV-HKU1 non-structural protein 4. Its high purity (>85%) makes it suitable for immunization protocols and subsequent antibody screening assays. These antibodies could become valuable research tools for detecting viral infection, studying protein localization, or developing

research-grade detection methods. The His-tagged protein also makes ELISA-based antibody characterization and titration studies more straightforward.

3. Structural and Biochemical Characterization

This purified recombinant protein provides material for biophysical and structural studies of HCoV-HKU1 non-structural protein 4. Researchers might use techniques such as circular dichroism spectroscopy, dynamic light scattering, or analytical ultracentrifugation to characterize the protein's folding, stability, and oligomerization state. The defined expression region (1-109aa) represents the complete protein sequence, making it suitable for comprehensive structural analysis. Studies of this nature could contribute to understanding the molecular basis of coronavirus non-structural protein function.

4. Comparative Coronavirus Research

The recombinant protein allows for comparative studies between HCoV-HKU1 and other coronavirus non-structural proteins to identify conserved or divergent functional domains. Cross-reactivity studies with antibodies raised against other coronavirus proteins could reveal evolutionary relationships and antigenic similarities. Researchers can use the protein in parallel assays with corresponding proteins from SARS-CoV, MERS-CoV, or other coronaviruses to understand species-specific differences. This comparative approach may provide insights into coronavirus evolution and host adaptation mechanisms.

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.