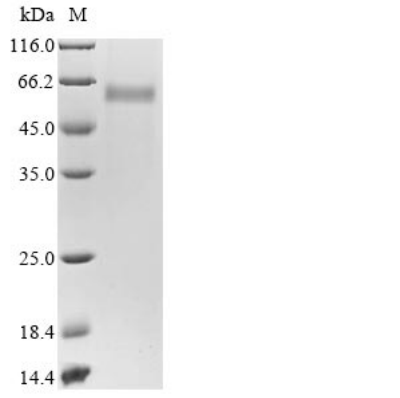
Recombinant Bovine coronavirus Nucleoprotein (N)

Product Code	CSB-MP321743BJG
Abbreviation	Recombinant Bovine coronavirus N 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.	P19902
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	Bovine coronavirus (strain F15) (BCoV) (BCV)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MSFTPGKQSSSRASSGNRSGNGILKWADQSDQSRNVQTRGRRAQPKQTATS QQPSGGNVVPYYSWFSGITQFQKGKEFEFAEGQGVPIAPGVPATEAKGYWY RHNRRSFKTRDGNQRQLLPRWYFYYLGTGPHAKDQYGTDIDGVFWVASNQA DVNTPADILDRDPSSDEAIPTRFPPGTVLPQGYYIEGSGRSAPNSRSTSRASS RASSAGSRSRANSGNRTPTSGVTPDMADQIVSLVLAKLGKDATKPQQVTKQT AKEIRQKILNKPRQKRSPNKQCTVQQCFGKRGPNQNFGGGEMLKLGTSDPQF PILAELAPTAGAFFFGSRLELAKVQNLSGNLDEPQKDVYELRYNGAIRFDSTLS GFETIMKVLNENLNAYQQQDGMMNMSPKPQRQRGQKNGQGENDNISVAAPK SRVQQNKSRELTAEDISLLKKMDEPYTEDTSEI
Research Area	Microbiology
Source	Mammalian cell
Target Names	N
Expression Region	1-448aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	51.7 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Bovine coronavirus Nucleoprotein (N) is produced in a mammalian cell expression system, which appears to ensure proper folding and post-translational modifications. The protein spans the complete sequence of 1-448 amino acids and includes a C-terminal 6xHis-tag for simplified purification and detection. Purity levels exceed 85% based on SDS-PAGE confirmation, making this product suitable for various research applications that require high-quality recombinant proteins.

The nucleoprotein of Bovine coronavirus likely plays a critical role in packaging and protecting viral RNA. It participates in forming the ribonucleoprotein complex, which appears essential for viral genome replication and transcription. This protein has become a key focus in research aimed at understanding coronavirus replication mechanisms and developing diagnostic tools.

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 Validation Studies

This full-length recombinant bovine coronavirus nucleoprotein can function as an immunogen for generating monoclonal or polyclonal antibodies specific to BCoV N protein. The C-terminal 6xHis tag simplifies purification and immobilization for antibody screening assays. Researchers may apply this protein in ELISA-based antibody characterization studies to determine binding specificity and affinity. The mammalian expression system likely preserves proper protein folding, which might maintain conformational epitopes important for antibody recognition.

2. Protein-Protein Interaction Studies

The nucleoprotein can be applied in pull-down assays to identify cellular or viral proteins that interact with BCoV N protein during infection. Its C-terminal His-tag allows immobilization on nickel-affinity matrices for capturing potential binding

partners from cell lysates or viral protein preparations. Co-immunoprecipitation experiments may help validate specific interactions identified through pull-down approaches. These studies could contribute to understanding the molecular mechanisms behind bovine coronavirus replication and pathogenesis.

3. Structural and Biochemical Characterization

This recombinant protein provides material for biophysical studies focused on characterizing the structural properties of bovine coronavirus nucleoprotein. Researchers might perform circular dichroism spectroscopy to analyze secondary structure content and thermal stability. The protein could also be used in analytical ultracentrifugation or dynamic light scattering experiments to examine oligomerization states and protein aggregation behavior. Such biochemical analyses may provide insights into the fundamental properties of this viral nucleoprotein.

4. Comparative Coronavirus Research

The recombinant BCoV nucleoprotein may function as a reference standard in comparative studies examining nucleoproteins across different coronavirus species. Cross-reactivity studies with antibodies raised against other coronavirus nucleoproteins could reveal conserved and variable epitopes. Sequence and structural comparisons using this purified protein alongside nucleoproteins from other coronaviruses might help identify evolutionary relationships and functional domains. This application supports broader coronavirus research initiatives and pandemic preparedness studies.

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.