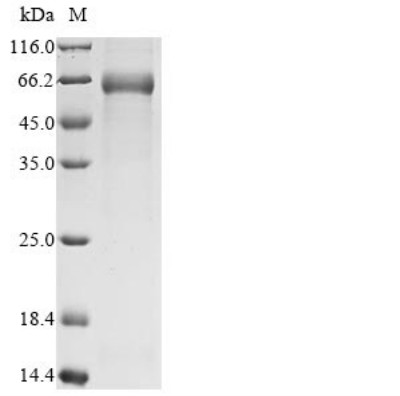
Recombinant Avian infectious bronchitis virus Nucleoprotein (N)

Product Code	CSB-MP822153AIAH
Abbreviation	Recombinant Avian infectious bronchitis virus 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.	Q96605
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	Avian infectious bronchitis virus (strain V18/91) (IBV)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MSAGKLKFDSPAPILKLSKNTGSTPPKVGGTGQASWFQSLKEKKRTGTPPTFE GSGVPDNSNVKPQFQHGYWKRQHRYKPGKGGRKPVADAWYFYYTGTGPFG DLKWGDSNDDVVWVKAKGADTSKIGNYGVRDPDKFDQAPLRFTEGGPDNNY RWDFIALNRGRSRNSSAVTSRENSRPGSRDSSRGRQRSRVDDDLIDRAAKIIM QQQKNGSRISKQKANEMAERKYHKRAIAPGKRIDEVFGQRRKGQAPNFGDDK MIEEGVKDGRLTAMLNLVPTPHACLLGSMVTAKLQPDGLHVRFSFETVVKRED PQFANYSKICDECVDGVGTRPKDDPTPRSRAASKDRNSAPATPKQQRAKKVH KKKEEESSLTEEEEEVNKQLEYDDDVTDIPNKIDWGEGAFDDINI
Research Area	Microbiology
Source	Mammalian cell
Target Names	N
Expression Region	1-409aa
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	48 kDa
Protein Length	Full Length
Image	



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

Description

This recombinant avian infectious bronchitis virus nucleoprotein (N) gets expressed in a mammalian cell system, which appears to help with proper protein folding and post-translational modifications. The complete protein covers amino acids 1 to 409 and comes with a C-terminal 6xHis-tag that makes purification and detection more straightforward. SDS-PAGE analysis confirms purity levels above 90%, suggesting this product works well for research applications that need high-quality proteins.

The nucleoprotein (N) of avian infectious bronchitis virus seems to play a key role in the viral life cycle. It's mainly involved in packaging and encapsidating viral RNA. This protein is likely essential for forming the viral ribonucleoprotein complex, which makes it an interesting target for studies on viral assembly and replication. Learning how this protein functions and interacts with other components may help researchers better understand coronavirus biology more broadly.

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

This full-length recombinant IBV nucleoprotein could work as an immunogen for creating polyclonal or monoclonal antibodies that target IBV specifically. The C-terminal 6xHis tag makes purification easier and allows for straightforward immobilization during antibody screening assays. Since it's produced in mammalian cells, the protein probably maintains proper folding and modifications that might be crucial for keeping native epitopes intact. ELISA-based screening with this protein may help researchers identify high-affinity antibodies for future IBV research.

2. Protein-Protein Interaction Studies

The 6xHis tag appears useful for pull-down assays aimed at finding cellular

proteins that interact with IBV nucleoprotein during infection. Because this is the full-length protein (1-409aa), it likely preserves all the interaction domains found in the native nucleoprotein. Researchers can attach this recombinant protein to nickel-affinity matrices and mix it with cell lysates to capture binding partners. Mass spectrometry analysis of these pulled-down complexes might reveal host factors that play roles in IBV replication or disease development.

3. Biochemical Characterization and Binding Assays

This recombinant nucleoprotein offers opportunities to study its biochemical properties, particularly RNA-binding specificity and how it forms oligomers. The high purity level (>90%) suggests it's well-suited for quantitative binding experiments with viral RNA sequences or synthetic oligonucleotides. Gel shift assays, surface plasmon resonance, or fluorescence polarization experiments could help characterize how the nucleoprotein interacts with nucleic acids. The mammalian expression system may be important for maintaining the native protein shape needed for reliable binding studies.

4. Immunoassay Development and Standardization

The recombinant protein works as a consistent antigen for developing and fine-tuning immunoassays in IBV research. Producing it consistently from mammalian cells likely ensures that different batches behave similarly, which is valuable for assay standardization. This protein could help establish reference curves in ELISA formats or serve as a positive control in Western blot experiments. The 6xHis tag allows for oriented attachment to surfaces, potentially boosting assay sensitivity and specificity compared to random protein positioning.

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.