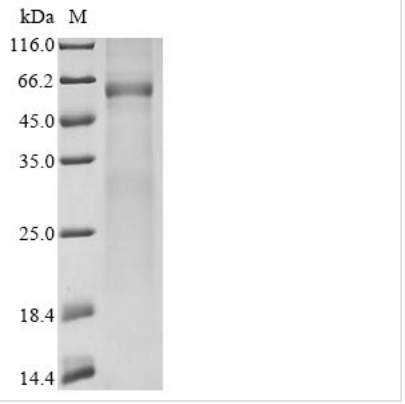
Recombinant Avian infectious bronchitis virus Nucleoprotein (N)

Product Code	CSB-MP320135ARV
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.	P12648
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 KB8523) (IBV)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MASGKATGKTDAPAPVIKLGGPKPPKVGSSGNASWFQAIKAKKLNSPPLKFEG SGVPDNENLKTSQQHGYWRRQARFKPSKGGRKPVPDAWYFYYTGTGPAAD LNWGDSQDGIVWVAAKGADTKSRSNQGTRDPDKFDQYPLRFSDGGPDGNF RWDFIPLNRGRSGKSTAASSAASSRAPSREGSRGRRSGAEDDLIARAAKIIQD QQKKGARITKAKADEMAHRRYCKRTIPPGYKVDQVFGPRTKGKEGNFGDDK MNEEGIKDGRVTAMLNLVPSSHACLFGSRVTPKLQPDGLHLKFEFTTVVSRND PQFDNYVKICDQCVDGVGTRPKDDEPKPKSRSSSRPATRTSSPAPRQPRPKK EKKTKKQDDEVDKALTSDEERNNAQLEFDDEPKVINWGDSALGENEL
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	47.2 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 mammalian cells and contains the complete 409 amino acid sequence. The protein comes with a C-terminal 6xHis-tag that makes purification and detection much simpler. SDS-PAGE analysis confirms the purity exceeds 85%, which appears suitable for most research applications. This product is for research use only.

The Avian infectious bronchitis virus Nucleoprotein seems to play a central role in the viral life cycle. It's primarily involved in RNA binding and genome packaging - processes that are likely essential for forming the viral ribonucleoprotein complex. This complex represents a key component in viral replication and assembly. Researchers studying viral replication mechanisms or developing strategies against infectious bronchitis virus infections may find understanding this protein's function particularly important.

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 straightforward and helps with immobilization during antibody screening assays. Since it's expressed in mammalian cells, the protein probably maintains proper folding and post-translational modifications. These modifications might be critical for preserving native epitopes. Researchers could then validate the antibodies they generate using this same recombinant protein in ELISA, Western blot, and immunoprecipitation assays.

2. Protein-Protein Interaction Studies

Coronavirus nucleoproteins typically interact with viral RNA and other viral

proteins during replication and assembly. This recombinant protein works well in pull-down assays - the C-terminal His tag allows for immobilization on metal affinity resins to identify binding partners. Co-immunoprecipitation experiments and yeast two-hybrid screens could also take advantage of this protein to map interaction networks. Studies like these would likely contribute to our understanding of IBV replication mechanisms and may help identify potential antiviral targets.

3. Structural and Biochemical Characterization

Having the full-length recombinant nucleoprotein provides material for detailed structural studies. This includes X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy. Biochemical assays can examine protein stability, oligomerization states, and how the protein changes shape under different conditions. The His tag makes protein purification easier for these analyses, while the mammalian expression system helps ensure the folding resembles what happens naturally. These studies would advance our basic understanding of how IBV nucleoprotein structure relates to function.

4. Enzyme-Linked Immunosorbent Assays (ELISA) Development

This recombinant protein could work as a coating antigen for developing research-grade ELISA systems that detect IBV-specific antibodies in experimental samples. The high purity (>85%) and His tag allow for consistent immobilization and measurement on ELISA plates. Such assays would be valuable for monitoring immune responses in vaccination studies, tracking viral exposure in research flocks, or screening hybridoma supernatants during antibody development projects.

5. RNA-Binding Studies

Coronavirus nucleoproteins are known to bind viral RNA and appear crucial for genome packaging and replication. This recombinant IBV nucleoprotein can be used in electrophoretic mobility shift assays (EMSA) or filter binding assays to characterize RNA-binding specificity and affinity. The protein could also work in RNA immunoprecipitation experiments - using the His tag for capture helps identify preferred binding sequences or secondary structures in IBV genomic or subgenomic RNAs.

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.