# Recombinant Bat coronavirus HKU3 Nucleoprotein2 (N)

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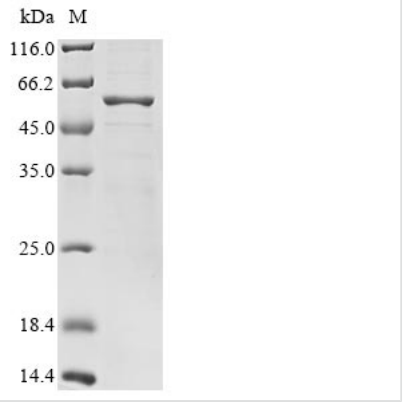
| **Product Code** | CSB-BP664686BFDc7 |
| **Abbreviation** | Recombinant Bat coronavirus HKU3 N protein |
| **Storage** | The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C. |
| **Uniprot No.** | Q3LZX4 |
| **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** | Bat coronavirus HKU3 (BtCoV) (SARS-like coronavirus HKU3) |
| **Purity** | Greater than 85% as determined by SDS-PAGE. |
| **Sequence** | MSDNGPQSQRSAPRITFGGPADSNDNNQDGGRSGARPKQRRPQGLPNNTA SWFTALTQHGKEELRFPRGQGVPINTNSGKDDQIGYYRRATRRVRGGDGKM KELSPRWYFYYLGTGPEASLPYGANKEGIVWVATEGALNTPKDHIGTRNPNN NAAIVLQLPQGTTLPKGFYAEGSRGGSQSSSRSSSRSRGNSRNSTPGSSRGS SPARLASGGGETALALLLLDRLNQLESKVSGKGQQQPGQTVTKKSAAEASKK PRQKRTATKQYNVTQAFGRRGPEQTQGNFGDQELIRQGIDYKHWPQIAQFAP SASAFFGMSRIGMEVTPSGTWLTYHGAIKLDDKDPQFKDNVILLNKHIDAYKTF PPTEPKKDKKKKTDEAQPLPQRQKKQPTVTLLPAADMDDFSRQLQHSMSGAS ADSTQA |
| **Research Area** | Microbiology |
| **Source** | Baculovirus |
| **Target Names** | N |
| **Expression Region** | 1-421aa |
| **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 kDa |
| **Protein Length** | Full Length |
| **Image** | |




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

## Description

Recombinant Bat coronavirus HKU3 Nucleoprotein2 (N) is produced through a baculovirus expression system, yielding the complete protein spanning amino acids 1 to 421. The protein includes a C-terminal 6xHis-tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows purity levels exceeding 85%, making this recombinant protein well-suited for research applications that demand high-quality reagents.

The nucleoprotein of Bat coronavirus HKU3 appears to play a central role in how the virus replicates and assembles itself. It's involved in packaging and protecting viral RNA—essentially making it a key player in coronavirus biology research. Studying its function may provide valuable insights into how these viruses cause disease and could help researchers develop better diagnostic tools and treatments.

### 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. Comparative Coronavirus Nucleoprotein Structure-Function Studies

This full-length recombinant BtCoV HKU3 nucleoprotein works well as a reference protein when comparing structural and functional features with nucleoproteins from other coronaviruses like SARS-CoV, MERS-CoV, and SARS-CoV-2. The C-terminal His-tag makes purification simpler and allows for immobilization in biophysical studies—think dynamic light scattering, analytical ultracentrifugation, or surface plasmon resonance. Scientists can examine evolutionary relationships and structural patterns that seem to be conserved across coronavirus nucleoproteins by looking at binding strengths, how they cluster together, and their shape-shifting properties. These comparative approaches may help us understand what drives nucleoprotein diversity and evolution among coronaviruses.

### 2. RNA-Protein Interaction Screening Assays

Researchers can use this recombinant nucleoprotein in laboratory RNA-binding experiments to study how it interacts with different RNA types—viral genomic RNA, subgenomic RNA, and artificially created RNA sequences. The His-tag allows for straightforward attachment to nickel-coated surfaces or beads, which is handy for pull-down experiments and measuring how fast binding occurs. Scientists often turn to techniques like electrophoretic mobility shift assays (EMSA), filter binding assays, or fluorescence polarization to figure out RNA-binding preferences and strength. These studies might shed light on how coronaviruses package their RNA and form ribonucleoprotein complexes.

**3. Antibody Development and Immunological Characterization**

This purified nucleoprotein works as a strong immunogen for creating both polyclonal and monoclonal antibodies that specifically target BtCoV HKU3. The high purity level (>85%) means there's minimal contamination that could mess with immune responses or antibody specificity. The recombinant protein finds use in various immunoassays—ELISA, Western blotting, and immunofluorescence—to confirm antibody specificity and check for cross-reactivity patterns. Such antibodies become useful research tools for tracking coronavirus nucleoprotein location, expression levels, and protein interactions in lab settings.

**4. Protein-Protein Interaction Studies**

Scientists can use this His-tagged nucleoprotein in pull-down assays and co-immunoprecipitation experiments to identify and study protein interactions that matter in coronavirus biology. This approach allows investigation of potential connections with host cell proteins, other viral proteins, or nucleoproteins from different coronavirus species using methods like affinity chromatography or yeast two-hybrid screening. The baculovirus expression system generally produces properly folded proteins, which is important for keeping natural protein interaction abilities intact. These interaction studies help build our understanding of the molecular networks that drive coronavirus replication and disease mechanisms.

**5. Biochemical Assay Development and Optimization**

This recombinant protein serves as a standardized tool for developing and fine-tuning biochemical assays related to coronavirus nucleoprotein function. The consistent quality and purity create reproducible conditions for screening compounds that might inhibit nucleoprotein function or for building quantitative assays to measure nucleoprotein activity. Scientists can use this protein to test assay protocols, create standard curves, and optimize reaction conditions for follow-up experiments. The His-tag makes protein quantification and quality control more consistent across different experimental batches.

**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

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| | concentration of glycerol is 50%. Customers could use it as reference. |
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