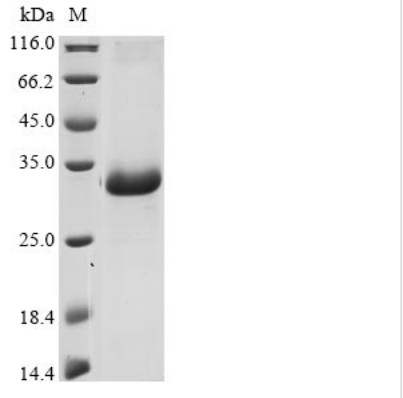
Recombinant Bovine coronavirus Non-structural protein 2a (2a)

Product Code	CSB-EP889517BJJ
Abbreviation	Recombinant Bovine coronavirus Non-structural protein 2a
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.	Q9QAS3
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 LY-138) (BCoV) (BCV)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MAVAYADKPNHFINFPLTQFEGFVLNYKGLQFQLLDEGVDCKIQTAPHISLAML DIQPEDYRSVDVAIQEVIDDMHWGEGFQIKFDNPHILGRCIVLDVKGVEELHDD LVNYIRDKGCVADQSRKWIGHCTIAQLTNAALSIKENVDFINSMQFNYKITINPS SPARLEIVKLGAEKKDGFYETIVSHWMGIRFEYNPPTDKLAMIMGYCCLEVVRK ELEEGDLPENDDDAWFKLSYHYENNSWFFRHVYRKSFYFRKSCQNLDCNCL GFYESSVEED
Research Area	Microbiology
Source	E.coli
Target Names	2a
Expression Region	1-278aa
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	33.2 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 Non-structural protein 2a (2a) is produced using an E. coli expression system and spans the complete protein sequence from amino acids 1 to 278. The protein includes a C-terminal 6xHis-tag that makes purification more straightforward. SDS-PAGE analysis shows the protein reaches greater than 85% purity, which appears suitable for most research applications. This product is strictly for research use and cannot be used for therapeutic or diagnostic purposes.

Non-structural protein 2a seems to play a role in how Bovine coronavirus replicates and transcribes its genetic material. As part of the virus's replication machinery, it likely serves an important function in the viral life cycle. Studying this protein may be critical for virology research and could potentially help in developing antiviral strategies. It has become a focus for researchers investigating how coronaviruses replicate and cause disease.

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 Immunoassay Research

This recombinant bovine coronavirus non-structural protein 2a can work as an immunogen for creating specific antibodies against BCoV NSP2a in research labs. The C-terminal 6xHis tag makes purification and immobilization easier when screening antibodies. Scientists can use this protein to develop polyclonal or monoclonal antibodies for studying how coronavirus non-structural proteins work. The high purity level (>85%) suggests it should work well for immunization protocols and as a coating antigen in ELISA-based studies that characterize antibodies.

2. Protein-Protein Interaction Studies

The 6xHis tag allows for pull-down assays that may identify cellular or viral proteins interacting with bovine coronavirus NSP2a during infection or

replication. Scientists can attach this recombinant protein to nickel-affinity matrices and incubate it with cell lysates or other viral proteins to study interaction networks. This method might help clarify NSP2a's role in coronavirus biology and reveal potential binding partners. Since the full-length expression region (1-278aa) is preserved, native protein domains that could be critical for normal interactions remain intact.

3. Biochemical Characterization and Structural Studies

This purified recombinant protein offers material for basic biochemical analysis of bovine coronavirus NSP2a properties. This includes confirming molecular weight, measuring thermal stability, and testing solubility characteristics. The protein can be used in initial structural studies like circular dichroism spectroscopy to evaluate secondary structure content. Scientists can also perform comparative studies between different coronavirus non-structural proteins using this standardized recombinant material. The E. coli expression system typically provides enough protein for multiple analytical approaches.

4. Serological Research Tools

The recombinant NSP2a protein can function as a defined antigen in research-focused serological assays to study immune responses against bovine coronavirus in experimental animal models. Scientists can use this protein to develop and standardize ELISA protocols for detecting anti-NSP2a antibodies in serum samples from research studies. The 6xHis tag may allow for more consistent protein orientation when attached to detection surfaces, which could improve how reproducible assays are. This application supports epidemiological research and vaccine development studies in controlled laboratory settings.

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.