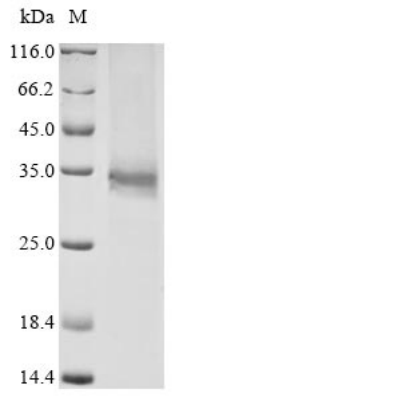
Recombinant Bovine coronavirus Non-structural protein 2a (2a)

Product Code	CSB-BP889517BJJ
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 90% as determined by SDS-PAGE.
Sequence	MAVAYADKPNHFINFPLTQFEGFVLNYKGLQFQLLDEGVDCKIQTAPHISLAML DIQPEDYRSVDVAIQEVIDDMHWGEGFQIKFDNPHILGRCIVLDVKGVEELHDD LVNYIRDKGCVADQSRKWIGHCTIAQLTNAALSIKENVDFINSMQFNYKITINPS SPARLEIVKLGAEKKDGFYETIVSHWMGIRFEYNPPTDKLAMIMGYCCLEVVRK ELEEGDLPENDDDAWFKLSYHYENNSWFFRHVYRKSFYFRKSCQNLDCNCL GFYESSVEED
Research Area	Microbiology
Source	Baculovirus
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	37.7 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 Non-structural protein 2a (2a) is produced using a baculovirus expression system. The expressed protein covers the complete amino acid sequence from position 1 to 278. A C-terminal 6xHis-tag has been added to help with purification and detection processes. SDS-PAGE analysis confirms the protein achieves greater than 90% purity, which appears to make it suitable for research applications that demand high-quality protein preparations.

Non-structural protein 2a (2a) from Bovine coronavirus seems to play an important part in how the virus replicates and transcribes its genetic material. This protein is involved in processing the viral polyprotein and likely serves a critical function in the viral life cycle. Studying this protein may be key to understanding coronavirus biology better. Such research could potentially reveal new insights into viral replication processes, possibly opening doors to therapeutic approaches.

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 recombinant bovine coronavirus non-structural protein 2a might work well as an immunogen for creating specific antibodies against BCoV NSP2a in research contexts. The high purity level (>90%) and C-terminal His-tag appear to make it appropriate for immunization protocols and follow-up antibody characterization tests. The His-tag allows for straightforward purification and attachment to surfaces for ELISA-based antibody screening and validation work. These antibodies could become useful research tools for investigating BCoV infection pathways and viral protein expression patterns.

2. Protein-Protein Interaction Studies

The C-terminal His-tag makes pull-down assays more manageable when trying

to identify cellular or viral proteins that may interact with NSP2a during bovine coronavirus infection. Researchers can attach the recombinant protein to nickel-affinity resins and use it to capture potential binding partners from cell lysates or viral protein mixtures. This method might help clarify what NSP2a actually does within the viral replication complex and could identify host factors that participate in BCoV disease development.

3. Biochemical Characterization and Structural Studies

The purified recombinant protein supplies material for fundamental biochemical analyses. These include confirming molecular weight, testing protein stability, and conducting initial structural characterization work. Since the baculovirus expression system generally produces properly folded eukaryotic proteins, this preparation appears suitable for biophysical studies like circular dichroism spectroscopy or dynamic light scattering. Such studies could establish baseline data about NSP2a structure and how stable it remains under different conditions.

4. In Vitro Assay Development

Researchers can use this recombinant NSP2a to create and refine various laboratory assays for studying bovine coronavirus biology. The protein may work as a positive control or standard in biochemical tests designed to explore NSP2a function, or as a substrate when testing possible viral enzyme activities. The His-tag helps ensure consistent protein measurement and standardization across different experimental setups.

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.