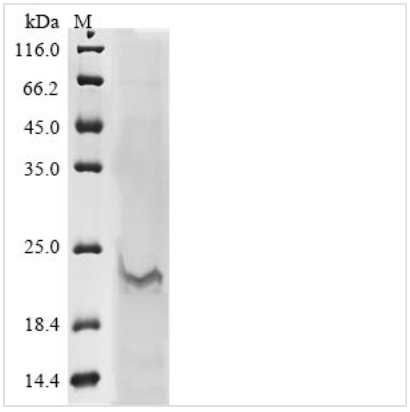
Recombinant Influenza A virus Matrix protein 2 (M2)

Product Code	CSB-CF3574GMC
Abbreviation	Recombinant Influenza A virus M2 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.	A0A2R3YRM7
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	Influenza A virus
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MSLLTEVETPTRSGWECRCSDSSDPLVIAANIIGILHLILWITDRLFFKCIYRRFK YGLKRGPSTEGVPESMREEYQQEQQSAVDVDDGHFVNIELE
Research Area	Immunology
Source	in vitro E.coli expression system
Target Names	M2
Expression Region	1-97aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	18.6kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Influenza A virus Matrix protein 2 (M2) is produced through an in vitro E.coli expression system, covering the complete 1-97 amino acid sequence. The protein comes with an N-terminal 10xHis-tag and a C-terminal Myc-tag, which makes purification and detection more straightforward. SDS-PAGE analysis shows purity levels exceeding 85%. This research-use-only product works well for experimental applications that need high-quality viral proteins.

The Matrix protein 2 (M2) of Influenza A virus appears to play a critical role in the virus's life cycle, especially during viral uncoating and assembly. It works as an ion channel, which seems vital for acidifying the viral interior—a process necessary for genome release. M2 has become a key target in antiviral research and may provide valuable insights into how influenza virus replication and pathogenesis actually work.

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 Characterization

This recombinant M2 protein can work as an immunogen or antigen for creating monoclonal or polyclonal antibodies against influenza A virus M2 protein. The dual His and Myc tags make purification and detection simpler during antibody screening processes. Researchers might use this protein in ELISA-based assays to study antibody binding specificity and affinity. Since the protein covers the full length (1-97aa), antibodies developed against conformational epitopes should be well-represented in the immune response.

2. Protein-Protein Interaction Studies

The N-terminal His tag and C-terminal Myc tag appear suitable for pull-down assays aimed at identifying cellular proteins that interact with influenza A virus M2 protein. Researchers can attach the protein to nickel-affinity resins or anti-

Myc antibody-coated beads to capture potential binding partners from cell lysates. These tags also allow for detection and measurement of the protein in co-immunoprecipitation experiments. Studies like these may help clarify the molecular mechanisms behind M2 protein function during viral infection.

3. Biochemical and Structural Analysis

This recombinant M2 protein works in various biochemical assays designed to study its basic properties—protein folding, stability, and how it forms oligomers. The high purity (>85%) makes it appropriate for biophysical characterization techniques like circular dichroism spectroscopy, dynamic light scattering, or analytical ultracentrifugation. Researchers can examine how the protein behaves under different pH and salt conditions to better understand its structural characteristics. The dual tags offer convenient ways to detect and measure the protein during these analyses.

4. Vaccine Research and Immunogenicity Studies

This full-length recombinant M2 protein could be valuable in preclinical vaccine development studies to test its immunogenic properties in animal models. Researchers might assess whether the protein can trigger immune responses and compare different adjuvant formulations or delivery approaches. The protein may serve as a reference standard when comparing the immunogenicity of modified M2 variants or fusion proteins. Such studies could contribute to understanding M2 protein's potential as a vaccine component in influenza research.

5. Assay Development and Screening Applications

The dual-tagged M2 protein can help develop and refine various research assays, including sandwich ELISAs, Western blot protocols, and immunofluorescence techniques. The His and Myc tags offer multiple detection options and internal controls for assay validation. Researchers might use this protein to create standard curves for quantitative assays or as a positive control in experimental workflows. The protein could also be useful in screening applications to identify small molecules or compounds that interact with M2 protein for research purposes.

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.