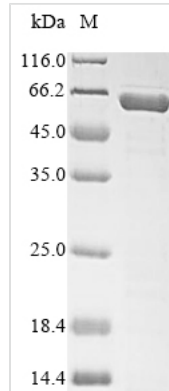




Recombinant Mouse Serine protease inhibitor A3N (Serpina3n)

Product Code	CSB-EP835578MO
Relevance	The single human alpha1-antichymotrypsin gene (SERPINA3) is represented by a cluster of 14 individual murine paralogs.
Abbreviation	Recombinant Mouse Serpina3n 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.	Q91WP6
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	FPDGTLGMDAAVQEDHDNGTQLDSLTLASINTDFAFSLYKELVLKNPDKNIVFS PLSISAALAVMSLGAKGNTLEEILEGLKFNLTTETSEADIHQGGFGHLLQRLNQPK DQVQISTGSALFIEKRQQILTEFQEAKTLYQAEFTADFQQPRQAKKLINDYV RKQTQGMIKELVSDLDKRTLMLVLVNIYFKAKWKVPFDPLDTFKSEFYAGKRR PVIVPMMSMEDLTTPYFRDEELSCTVVELKYTGNASALFILPDQGRMQQVEAS LQPETLRKWKNSLKPRMIDELHLPKFSISTDYSLEDVLSKLGIREVFSTQADLSA ITGTKDLRVSQVVHKAVLDVAETGTEAAAATGVKFVPMSAKLYPLTVYFNRPFLL IMIFDTETEIAPFIKIANPK
Research Area	Others
Source	E.coli
Target Names	Serpina3n
Protein Names	Spi2
Expression Region	21-418aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	60.8 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

Recombinant Mouse Serine protease inhibitor A3N (Serpina3n) is expressed in E.coli and features a full-length mature protein spanning amino acids 21 to 418. It comes with an N-terminal 6xHis-SUMO tag, which helps with purification and detection. The product shows purity greater than 85% as determined by SDS-PAGE. This is strictly for research use only and is not suitable for therapeutic applications.

Serine protease inhibitor A3N, also known as Serpina3n, belongs to the serpin family. These proteins appear to play crucial roles in regulating protease activity. This particular protein acts as an inhibitor of serine proteases, which are involved in various biological processes such as inflammation and immune response. The way it modulates protease activity may make it a valuable tool for studying protease-related pathways and mechanisms in research settings.

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. Protein-Protein Interaction Studies Using Pull-Down Assays

The N-terminal 6xHis-SUMO tag makes purification and immobilization of this recombinant Serpina3n protein relatively straightforward for pull-down experiments. Researchers might use this protein as bait to identify potential binding partners from mouse tissue lysates or cell extracts. The SUMO tag seems to provide additional stability and solubility, which could help maintain protein integrity during those long incubation periods that interaction studies often require. This approach may help reveal the molecular networks involving Serpina3n in various biological processes.

2. Antibody Development and Validation

This recombinant mouse Serpina3n can serve as an immunogen for generating specific antibodies against the mature protein sequence (21-418aa). The high purity (>85%) should minimize contamination that might lead to cross-reactive



antibodies. Researchers can use this protein for antibody screening, validation, and characterization through techniques such as ELISA, Western blotting, and surface plasmon resonance. The His-SUMO tag allows for easy purification and quantification of the antigen for standardized immunization protocols.

3. Structural and Biophysical Characterization Studies

The full-length mature protein expressed in *E. coli* provides a suitable substrate for structural biology applications including X-ray crystallography, NMR spectroscopy, and cryo-electron microscopy. Researchers can investigate the three-dimensional structure of mouse Serpina3n and compare it with other serine protease inhibitors. The protein can also be used in biophysical studies such as dynamic light scattering, circular dichroism spectroscopy, and thermal stability assays to characterize its folding properties and conformational changes.

4. In Vitro Biochemical Assays and Enzyme Kinetics

This recombinant Serpina3n can be used in biochemical assays to study its potential inhibitory activity against various serine proteases under controlled in vitro conditions. Researchers might perform enzyme kinetics studies to determine inhibition constants and specificity profiles using purified protease substrates. The protein serves as a valuable tool for investigating the mechanism of serine protease inhibition. It's also useful for comparative studies with other serpins from different species or with mutations.

5. Cell-Based Functional Studies

Researchers can add the recombinant protein to cell culture systems to study its effects on cellular processes in mouse cell lines or primary cells. This approach allows investigation of cellular uptake, localization, and any functional responses that might be triggered by extracellular Serpina3n treatment. The His-SUMO tag makes protein tracking and quantification in cell-based assays easier. This capability enables dose-response studies and time-course experiments to understand the protein's role in cellular physiology.

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.