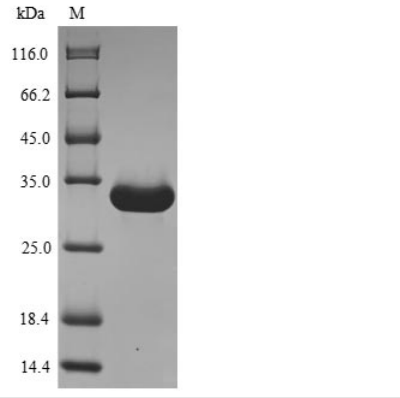
Recombinant Mouse Angiogenin-4 (Ang4)

Product Code	CSB-YP661010MOa4
Relevance	Has bactericidal activity against E.faecalis and L.monocytogenes, but not against L.innocua and E.coli. Promotes angiogenesis (in vitro). Has low ribonuclease activity (in vitro). Promotes proliferation of melanoma cells, but not of endothelial cells or fibroblasts (in vitro)
Abbreviation	Recombinant Mouse Ang4 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.	Q3TMQ6
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	QNERYEKFLRQHYDAKPNGRDDRYCESMMKERKLTSPCKDVNTFIHGTKKNIRAICGKKGSPYGENFRISNSPFQITTCTHSGASPRPPCGYRAFKDFRYIVIACEDGWPVHFDESFISP
Research Area	Cardiovascular
Source	Yeast
Target Names	Ang4
Expression Region	25-144aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-sumostar-tagged
Mol. Weight	29.9 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 Angiogenin-4 (Ang4) is produced in a yeast expression system and contains the full-length mature protein sequence, specifically amino acids 25-144. An N-terminal 6xHis-sumostar tag is included to make purification and detection more straightforward. SDS-PAGE analysis shows the product has greater than 90% purity, which appears to make it suitable for various research applications that need high-quality protein samples.

Angiogenin-4 (Ang4) is a protein that's involved in angiogenesis - the process where new blood vessels form. This process seems crucial in many normal body functions as well as disease states. Ang4 belongs to the ribonuclease A superfamily and likely plays a role in how cells respond to changes in their surrounding environment. Researchers are particularly interested in Ang4 when studying blood vessel development and the signaling pathways that control it.

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. In Vitro Ribonuclease Activity Characterization

This recombinant mouse Angiogenin-4 may be useful for studying its potential ribonuclease activity, since angiogenins are part of the RNase A superfamily. The N-terminal His-tag makes purification easier and allows the protein to be attached to surfaces for enzyme studies using different RNA substrates. Scientists can compare how mouse Ang4 behaves enzymatically compared to other angiogenin family members. This might help reveal how protein structure relates to function. The yeast expression system provides a more complex cellular environment for protein folding, which could help preserve the protein's natural enzymatic activity.

2. Protein-Protein Interaction Studies

The His-sumostar tag system makes pull-down experiments more feasible for finding proteins that might bind to mouse Angiogenin-4 in cell extracts or with purified proteins. The tag allows researchers to attach the protein to nickel-based columns while keeping it accessible for interaction studies. This approach could help reveal the molecular mechanisms behind how Ang4 functions in cells. Since the recombinant protein has high purity, binding specificity experiments should give more reliable results.

3. Antibody Development and Validation

This purified recombinant mouse Ang4 appears well-suited as an immunogen for creating antibodies that specifically recognize mouse Angiogenin-4. The mature protein region (25-144aa) represents what's found naturally in biological systems, so antibodies made against it should recognize the native protein. High

purity levels suggest there will be minimal unwanted reactions with contaminants during immunization. Scientists can then test these antibodies using the same recombinant protein in ELISA, Western blots, and other immune-based assays.

4. Comparative Structural and Biochemical Analysis

Researchers might use this recombinant protein for structural studies - trying to grow crystals for X-ray analysis, NMR studies, or other methods to understand mouse Ang4's three-dimensional structure. Comparing it with other angiogenin family members could reveal which structural features are conserved across species and which have changed. Testing the protein's stability and folding behavior under different conditions (various buffers, temperatures) may provide insights into how it functions. Such studies could contribute to understanding how the angiogenin protein family evolved over time.

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.