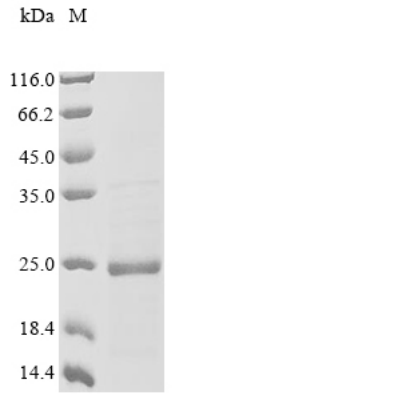
Recombinant Chicken Midkine (RIHB)

Product Code	CSB-EP013624CH
Abbreviation	Recombinant Chicken RIHB 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.	P24052
Product Type	Recombinant Proteins
Immunogen Species	Gallus gallus (Chicken)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	AKAKKEKMKKEGSECQDWHWGPCIPNSKDCGLGYREGSCGDESRKLKCKIP CNWKKKFGADCKYKFESWGGCSAKTGVKTRSGILKKALYNAECEEVVYVSKP CTAKMKAKAKAKKGKGKD
Research Area	Others
Source	E.coli
Target Names	RIHB
Protein Names	Recommended name: Midkine Alternative name(s): Retinoic acid-induced heparin-binding protein Short name= RI-HB
Expression Region	22-142aa
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	20.9 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 Chicken Midkine (RIHB) is produced in E. coli and contains the

full-length mature protein spanning amino acids 22 to 142. The protein comes engineered with both an N-terminal 10xHis tag and a C-terminal Myc tag for streamlined purification and detection. SDS-PAGE analysis shows the protein maintains greater than 85% purity, which appears adequate for most research applications. This product is intended for research use only.

Midkine functions as a heparin-binding growth factor that participates in various biological processes. The protein plays what seems to be a crucial role in cell proliferation, migration, and angiogenesis. Its significance likely extends to developmental and repair pathways, making it an important target for scientific studies focused on cellular growth and tissue regeneration.

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 dual-tagged recombinant chicken midkine works well in pull-down experiments designed to identify potential binding partners or interacting proteins from chicken cell lysates or tissue extracts. The N-terminal 10xHis tag allows for immobilization on nickel-affinity resins. Meanwhile, the C-terminal Myc tag provides an additional detection method for Western blot confirmation. This approach may help researchers study midkine's molecular interactions in avian systems and compare them with mammalian counterparts. The high purity level (>85%) should minimize background interference from contaminating proteins during interaction studies.

2. Antibody Development and Validation

This recombinant protein serves as a useful antigen for generating chicken midkine-specific antibodies in research applications. The dual tagging system offers comprehensive antibody validation through multiple detection methods, including anti-His and anti-Myc antibodies as positive controls. Researchers can develop both polyclonal and monoclonal antibodies for subsequent immunohistochemistry, Western blotting, or ELISA applications in avian developmental biology studies. Since the mature protein region (22-142aa) represents the biologically relevant form, it appears suitable for generating antibodies that recognize native chicken midkine.

3. Comparative Protein Structure and Function Analysis

Recombinant chicken midkine can be applied in comparative biochemical studies to analyze structural and functional differences between avian and mammalian midkine proteins. Researchers might perform biophysical characterization techniques such as circular dichroism spectroscopy, dynamic light scattering, or analytical ultracentrifugation to study protein folding and

stability. The dual tags help with protein purification and detection during various analytical procedures. This application seems particularly valuable for evolutionary biology research examining midkine conservation across vertebrate species.

4. ELISA Development and Quantitative Assays

The tagged recombinant protein can serve as both a standard and capture antigen in enzyme-linked immunosorbent assays for detecting chicken midkine in biological samples. The His tag enables oriented immobilization on nickel-coated plates, while the Myc tag provides an alternative detection pathway for assay validation. Researchers can develop sandwich ELISA formats or competitive binding assays to quantify midkine levels in chicken serum, tissue extracts, or cell culture supernatants. The high purity level should ensure reliable and reproducible quantitative measurements in research applications.

5. Cell Culture Supplementation Studies

This recombinant protein can be added to primary chicken cell cultures or established avian cell lines to investigate cellular responses to exogenous midkine exposure. The dual tagging system allows researchers to track protein uptake, localization, or degradation using tag-specific antibodies and microscopy techniques. The mature protein region ensures that cells are exposed to the biologically relevant form of midkine. Such studies may provide insights into midkine's role in chicken cell proliferation, differentiation, or survival pathways in controlled in vitro environments.

Shelf Life

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