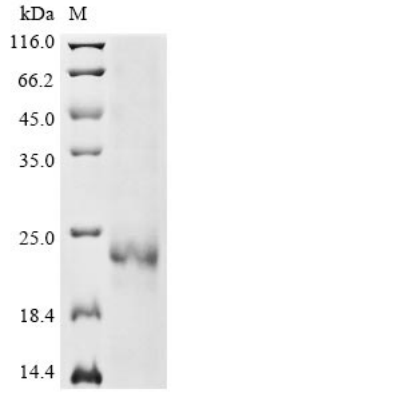
Recombinant Bovine Interleukin-7 (IL7)

Product Code	CSB-EP011669BO
Abbreviation	Recombinant Bovine IL7 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.	P26895
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	Bos taurus (Bovine)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	DCDISGKDGGAYQNVLMVNIDDLDNMINFDSNCLNNEPNFFKKHSCDDNKEA SFLNRASRKLRQFLKMNISDDFKLHLSTVSQGTLTLLNCTSKGKGRKPPSLSEA QPTKNLEENKSSKEQKKQNDLCFLKILLQKIKTCWNKILRGIKEH
Research Area	Immunology
Source	E.coli
Target Names	IL7
Expression Region	26-176aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	21.3 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 Bovine Interleukin-7 (IL7) is produced in E. coli and consists of the full length of the mature protein, spanning amino acids 26 to 176. This protein is tagged with an N-terminal 6xHis-tag, which makes purification and detection more straightforward. The product shows a purity greater than 85% as determined by SDS-PAGE, though this appears to provide adequate reliability for experimental applications. It is intended for research use only and is not suitable for human or veterinary use.

Interleukin-7 represents a key cytokine in immune response regulation. The protein plays what seems to be a significant role in T cell and B cell development and homeostasis. This makes it particularly valuable when studying immune system functions and disorders. IL7 is actively researched for its involvement in immune cell proliferation and survival, as well as its potential applications in immunotherapy and vaccine development.

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. Bovine Immune Cell Proliferation and Activation Studies

This recombinant bovine IL-7 may be used to investigate how bovine T lymphocytes and B cell precursors respond to proliferation and activation signals in vitro. Researchers can culture bovine peripheral blood mononuclear cells or isolated lymphocyte populations with varying concentrations of this IL-7 to assess dose-dependent cellular responses. The species-matched cytokine likely ensures physiologically relevant interactions with bovine IL-7 receptors. This characteristic appears valuable for studying bovine immunology and lymphocyte development mechanisms.

2. Comparative Cytokine Function Analysis Across Species

The bovine IL-7 protein can serve as a comparative tool in cross-species cytokine research, allowing investigators to examine functional differences between bovine and human or murine IL-7 signaling pathways. Researchers might perform parallel experiments using bovine, human, and mouse IL-7 on respective immune cell populations to identify species-specific receptor binding affinities and downstream signaling cascades. This application seems particularly useful for understanding evolutionary conservation and divergence of IL-7 function across mammalian species.

3. Anti-Bovine IL-7 Antibody Development and Validation

The N-terminal His-tagged recombinant protein can work as an immunogen for generating specific antibodies against bovine IL-7 or as a standard for validating existing antibodies. The His-tag makes purification and immobilization more

manageable for ELISA-based antibody screening and characterization assays. Researchers developing bovine-specific immunoassays or studying IL-7 expression in bovine tissues would likely benefit from this standardized antigen for antibody production and validation protocols.

4. Protein-Protein Interaction Studies with Bovine IL-7 Receptor Components

This recombinant protein can be used in biochemical binding assays to characterize interactions between bovine IL-7 and its receptor subunits, including the IL-7 receptor alpha chain and common gamma chain. The His-tag enables pull-down experiments and surface plasmon resonance studies to determine binding kinetics and affinities. Such studies would contribute to understanding the molecular basis of IL-7 signaling in bovine systems. The results could inform research on cytokine receptor biology, though more work may be needed to fully characterize these interactions.

5. Bovine Cell Culture Medium Supplementation for Research Applications

The recombinant bovine IL-7 can work as a defined supplement in specialized cell culture media for maintaining or expanding bovine lymphocyte populations in vitro. Researchers studying bovine immune responses, vaccine development, or cellular immunology can incorporate this cytokine to support the survival and proliferation of IL-7-dependent bovine immune cells. The species-matched origin appears to ensure optimal biological compatibility for long-term bovine cell culture applications, though individual optimization may still be necessary.

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.