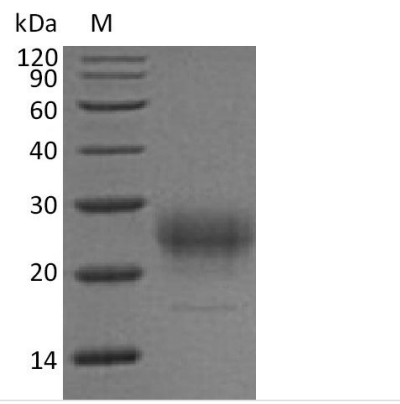
Recombinant Mouse Interleukin-7 (Il7) (Active)

Product Code	CSB-AP004791MO
Abbreviation	Recombinant Mouse Il7 protein (Active)
Uniprot No.	P10168
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 1xPBS, pH 7.4
Product Type	Interleukin
Immunogen Species	Mus musculus (Mouse)
Biological Activity	The ED50 as determined in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL) is 60-1000 pg/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	ECHIKDKEGKAYESVLMISIDELDKMTGTDSNCPNNEPNFFRKHVCDDTKEAA FLNRAARKLKQFLKMNISEEFNVHLLTVSQGTQTLVNCTSKEEKNVKEQKKND ACFLKRLLREIKTCWNKILKGSI
Research Area	Immunology
Source	Mammalian cell
Target Names	Il7
Expression Region	26-154aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	15.9 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 Interleukin-7 (Il7) comes from a mammalian cell expression system, which appears to ensure proper protein folding and post-

translational modifications. The protein represents the full-length mature form spanning amino acids 26-154, with a C-terminal 6xHis-tag added for easier purification. Purity exceeds 95% based on SDS-PAGE analysis, while endotoxin levels stay below 1.0 EU/μg. Biological activity gets confirmed through an ED50 range of 60-1000 pg/ml in cell proliferation assays using PHA-activated human peripheral blood lymphocytes.

Interleukin-7 stands out as a key cytokine that regulates lymphocyte development and homeostasis. This molecule plays a central role in T cell proliferation and survival, and it may also influence B cell development. Through the interleukin-7 receptor signaling pathway, it likely helps maintain immune system function. For researchers studying immune cell development and function, this protein offers a valuable experimental tool.

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. T Cell and B Cell Proliferation Assays

This recombinant mouse IL-7 can stimulate lymphocyte proliferation in laboratory settings, as shown by its biological activity on PHA-activated human peripheral blood lymphocytes with an ED50 of 60-1000 pg/ml. Scientists studying T cell and B cell development, activation, and survival mechanisms would find this protein useful for controlled experiments. Dose-response relationships in lymphocyte cultures become easier to investigate, and researchers can compare how different cell populations respond to proliferative signals. The high purity (>95%) and low endotoxin levels make it well-suited for delicate cell culture work where contamination might skew results.

2. Cytokine Receptor Binding Studies

The C-terminal 6xHis tag allows for purification and immobilization of this IL-7 protein in receptor binding assays and protein-protein interaction studies. Pull-down experiments using this tagged protein may help identify and characterize IL-7 receptor interactions or downstream signaling components. Since the mammalian expression system appears to maintain proper protein folding and post-translational modifications, receptor binding should remain authentic. Surface plasmon resonance and similar biophysical techniques can take advantage of the His-tag for oriented immobilization when studying binding kinetics and affinity.

3. Antibody Development and Validation

This highly pure recombinant mouse IL-7 works well as an antigen for generating and validating mouse IL-7-specific antibodies. Animal immunization for monoclonal or polyclonal antibody production becomes straightforward, and

the protein serves as a reliable positive control in antibody screening assays. The His-tag simplifies purification and detection in ELISA-based validation experiments. When developing IL-7-specific detection reagents, researchers can establish standard curves and test antibody specificity and cross-reactivity using this protein.

4. Comparative Species Cross-Reactivity Studies

Since this mouse IL-7 shows biological activity on human peripheral blood lymphocytes, it offers a way to explore cross-species cytokine activity and receptor conservation between mouse and human systems. Comparing how lymphocytes from different species respond to this mouse IL-7 may reveal insights about evolutionary conservation of IL-7 signaling pathways. This application proves particularly valuable for translational research where mouse models help scientists understand human immunological processes.

5. Protein Structure-Function Analysis

The defined expression region (26-154aa) representing the full-length mature protein makes this recombinant IL-7 suitable for structural biology studies and protein engineering experiments. As a reference standard, researchers can compare mutant or modified versions of IL-7 in functional assays. The consistent mammalian expression and high purity should enable reliable structure-activity relationship studies where specific amino acid residues or domains get modified and their effects on biological activity measured using the established proliferation assay.

Endotoxin	Less than 0.01 EU/μg as determined by LAL method.
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.