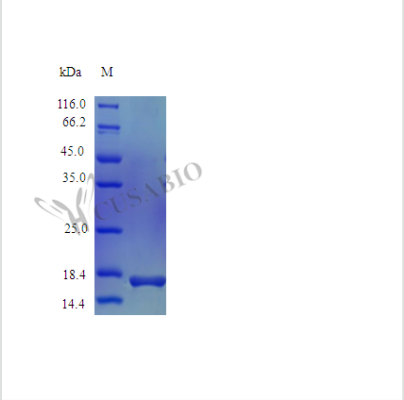
Recombinant Mouse Interleukin-36 beta protein (Il36b) (Active)

Product Code	CSB-AP003121MO
Abbreviation	Recombinant Mouse Il36b protein (Active)
Uniprot No.	Q9D6Z6
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4, 5% trehalose
Product Type	Interleukin
Immunogen Species	Mus musculus (Mouse)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by inducing IL-6 secretion in murine NIH/3T3 cells is less than 10 ng/ml, corresponding to a specific activity of >1.0x10^5 IU/mg.
Purity	>97% as determined by SDS-PAGE.
Sequence	SSQSPRNYRV HDSQQMVWVL TGNTLTAVPA SNNVKPVILS LIACRDTEFQ DVKKGNLVFL GIKNRNLCFC CVEMEGKPTL QLKEVDIMNL YKERKAQKAF LFYHGIEGST SVFQSVLYPG WFIATSSIER QTIILTHQRG KLVNTNFYIE SEK
Research Area	Immunology
Source	E.coli
Target Names	Il36b
Expression Region	31-183aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	17.4 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	11991723; 16141072; 19717513; 21860022; 21965679
Image	

Description

Recombinant Mouse Interleukin-36 beta protein (Il36b) is made using an E.Coli expression system and contains the complete mature protein sequence from amino acids 31 to 183. This tag-free protein shows high purity—more than 97% according to SDS-PAGE analysis. The protein appears to have considerable biological activity, with an ED50 of less than 10 ng/ml when triggering IL-6 secretion in murine NIH/3T3 cells. This translates to a specific activity exceeding 1.0 × 10^5 IU/mg. Endotoxin levels stay below 1.0 EU/μg, as measured by the LAL method.

Interleukin-36 beta (Il36b) belongs to the interleukin-1 family and seems to play an important role in immune system communication. The protein is involved in controlling inflammatory responses and is known to trigger pathways that lead to cytokine production, including IL-6. Because of its role in immune regulation, Il36b has become a key focus for researchers studying inflammation and related biological processes.

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. IL-6 Induction Assays in Murine Cell Lines

This recombinant mouse IL-36β protein works well for studying inflammatory signaling pathways. Its proven ability to trigger IL-6 secretion in murine NIH/3T3 cells makes it particularly useful for this purpose. With an established ED50 of less than 10 ng/ml, researchers have a solid quantitative reference point for dose-response studies looking at IL-36β-driven cytokine production. Scientists can apply this protein to explore the molecular mechanisms behind IL-36β signaling and how it functions in inflammatory cascades. The high specific activity (>1.0 × 10? IU/mg) should help ensure consistent and reproducible results in cell-based functional assays.

2. Antibody Development and Validation

The exceptional purity (>97%) and tag-free design of this recombinant mouse IL-36β protein may make it an excellent choice as an immunogen for creating specific antibodies against mouse IL-36β. The protein can function as both a positive control and standard in antibody characterization assays—think ELISA, Western blotting, and immunoprecipitation experiments. Since endotoxin levels remain low (<1.0 EU/μg), any immune responses generated are likely to target the IL-36β protein itself rather than unwanted bacterial contaminants. Researchers can also test the specificity and cross-reactivity of existing anti-IL-36β antibodies using this protein.

3. Protein-Protein Interaction Studies

This biologically active recombinant IL-36β protein appears well-suited for biochemical assays aimed at identifying and characterizing binding partners and receptor interactions. Scientists might find it useful in pull-down assays, surface plasmon resonance studies, or other binding experiments designed to investigate IL-36β receptor binding kinetics and specificity. The mature protein sequence (31-183aa) represents the functional domain, which makes it appropriate for studying interactions that actually occur in living systems. High purity levels should minimize interference from contaminants during sensitive binding assays.

4. Comparative Species-Specific Inflammatory Response Studies

The mouse-specific sequence of this IL-36β protein allows researchers to conduct targeted studies comparing inflammatory responses between mouse and other model systems. Scientists can test this protein in murine cell culture models to explore species-specific differences in IL-36β signaling pathways and their downstream effects. The validated biological activity in murine NIH/3T3 cells provides a proven system for studying mouse-specific IL-36β functions. These studies might help researchers understand how inflammatory signaling mechanisms have evolved differently across species.

5. Cytokine Network Analysis in Inflammatory Models

This recombinant mouse IL-36β protein could prove valuable for studying its role within larger cytokine networks in laboratory inflammatory models. Given that it can trigger IL-6 secretion, researchers may want to investigate how IL-36β affects the production of other inflammatory mediators and cytokines. The protein can be combined with other cytokines to study whether they work together or against each other in murine cell culture systems. Low endotoxin content helps ensure that any effects observed are likely due to IL-36β activity rather than bacterial contamination.

Endotoxin	Less than 1.0 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.