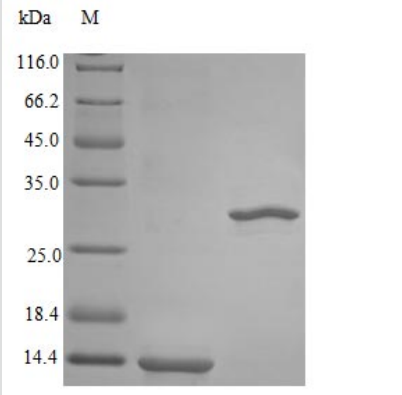
Recombinant Rhesus Macaque Interleukin-5 protein (IL5) (Active)

Product Code	CSB-AP003091MOW
Abbreviation	Recombinant Rhesus macaque IL5 protein (Active)
Uniprot No.	P48093
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Interleukin
Immunogen Species	Macaca mulatta (Rhesus macaque)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using human TF-1 cells is less than 4 ng/ml, corresponding to a specific activity of >2.5x10^5 IU/mg.
Purity	>98% as determined by SDS-PAGE.
Sequence	IPTEIPASAL VKETLALLST HRTLLIANET LRIPVPVHKN HQLCTEEIFQ GIGTLESQTV QGGTVERLFK NLSLIKKYIG GQKKKCGEER RRVNQFLDYL QEFLGVMNTE WIIES
Research Area	Immunology
Source	E.Coli
Target Names	IL5
Expression Region	20-134aa
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	13.1 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	7561102
Image	

Description

Recombinant Rhesus Macaque Interleukin-5 protein (IL5) is produced in E. coli and comes without any tags, which should minimize interference with its biological function. The protein represents the full mature form, covering amino acids 20-134. Testing shows purity levels above 98% based on SDS-PAGE analysis. Biological activity appears robust, with an ED50 below 4 ng/ml when tested in human TF-1 cell proliferation assays. This translates to a specific activity exceeding 2.5 × 10^5 IU/mg. Endotoxin contamination remains low at less than 1.0 EU/μg, as measured by the LAL method.

Interleukin-5 (IL5) is a cytokine that seems particularly important for eosinophil regulation and activation. Eosinophils are specialized white blood cells that respond to immune challenges and allergic reactions. IL5 appears central to both the growth and differentiation of these cells. This makes it valuable for researchers studying immune system mechanisms and related disorders. The protein's role in inflammation and immune regulation pathways may explain why it draws significant scientific interest.

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. Cell Proliferation and Viability Assays for Eosinophil Research

This recombinant rhesus macaque IL-5 protein could stimulate eosinophil proliferation and survival in laboratory studies using non-human primate cell models. With confirmed biological activity showing an ED50 below 4 ng/ml, it appears well-suited for dose-response experiments exploring eosinophil behavior. Scientists might find it useful for investigating eosinophil differentiation pathways, survival mechanisms, and responses to different experimental treatments in preclinical settings.

2. Cross-Species Cytokine Activity Studies

The biologically active rhesus macaque IL-5 protein offers a chance to examine cross-species cytokine interactions and receptor binding patterns between primate species. Since activity testing involved human TF-1 cells, this protein could prove valuable in comparative studies looking at IL-5 receptor conservation and signaling similarities across primates. Research along these lines might shed light on how cytokine-receptor interactions have been preserved through evolution.

3. Antibody Development and Validation

This high-purity, tag-free IL-5 protein works well as an antigen for creating and testing antibodies specific to rhesus macaque IL-5. The greater than 98% purity

and minimal endotoxin levels make it appropriate for immunization protocols and follow-up antibody validation work. Scientists can apply this protein in ELISA development, Western blot confirmation, and specificity testing for newly created anti-IL-5 antibodies designed for non-human primate research.

4. Biochemical Characterization and Protein-Protein Interaction Studies

The recombinant protein may prove useful in biochemical assays aimed at characterizing IL-5 binding kinetics, receptor affinity, and protein stability under different experimental conditions. Its confirmed biological activity allows for structure-function relationship studies and investigation of how IL-5 interacts with its primary receptors or other binding partners. The absence of fusion tags suggests that binding studies should reflect natural protein interactions without potential tag-related complications.

5. Preclinical Disease Model Development

This biologically active rhesus macaque IL-5 protein could help develop and validate non-human primate models of eosinophil-related diseases for preclinical research. The protein's demonstrated activity in cell-based assays supports its potential use in live animal studies examining eosinophil recruitment, tissue infiltration, and inflammatory responses in rhesus macaque models. Applications like these might help bridge the gap between rodent studies and human disease research, though translational success is never guaranteed.

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.