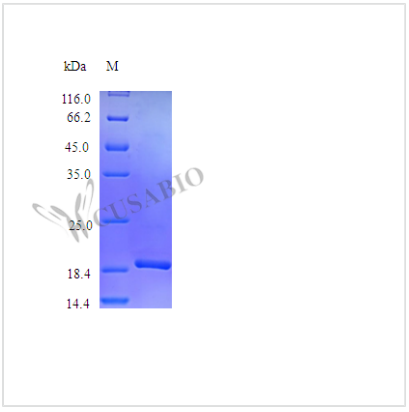
Recombinant Mouse Interleukin-11 protein (Il11) (Active)

Product Code	CSB-AP003361MO
Abbreviation	Recombinant Mouse Il11 protein (Active)
Uniprot No.	P47873
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Interleukin
Immunogen Species	Mus musculus (Mouse)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using murine T11 cells is less than 2 ng/ml, corresponding to a specific activity of >5.0x10^5 IU/mg.
Purity	>97% as determined by SDS-PAGE.
Sequence	M+PGPPAGSPR VSSDPRADLD SAVLLTRSLL ADTRQLAAQM RDKFPADGDHSLDSLPTLAM SAGTLGSLQL PGVLTRLRVD LMSYLRHVQW LRRAGGPSLKTLEPELGALQ ARLERLLRRL QLLMSRLALP QAAPDQPVIP LGPPASAWGSIRAAHAILGG LHLTLDWAVR GLLLLKTRL
Research Area	Immunology
Source	E.coli
Target Names	Il11
Expression Region	22-199aa
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	19.1 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	8913282; 10026196; 22253262; 23948300
Image	



Description

Our product CSB-AP003361MO is an active recombinant mouse IL11. It is generated by expressing the vector that contains the gene fragment encoding the 22-199aa of the mouse IL11 in E.coli. Its biological activity is validated by a cell proliferation assay using murine T11 cells, with an ED_{50} of ? 2 ng/ml, corresponding to a specific activity of >5.0x105 IU/mg. Its purity is up to 97% as assessed by SDS-PAGE. The endotoxin level of this recombinant IL11 is less than 1.0 EU/μg as determined by the LAL method.

Mouse IL11 is a cytokine belonging to the IL6 family, which is important in various biological processes, including inflammation, tissue repair, and immune responses. It is primarily produced by activated fibroblasts and epithelial cells in response to inflammatory stimuli. IL11 exerts its effects through the IL11 receptor, which is widely expressed in various tissues, including the heart, lungs, liver, and kidneys [1][2].

IL11 is involved in hematopoiesis and immune responses. IL11 has been shown to enhance the efficacy of hematopoietic stem cell transplantation in models of aplastic anemia by modulating signaling pathways that promote cell proliferation and survival [3]. Moreover, IL11 has been identified as a key player in autoimmune conditions, such as experimental autoimmune encephalomyelitis, where it regulates inflammatory processes and demyelination [4]. In reproductive biology, IL11 is essential for female fertility, particularly during the implantation phase. It has been demonstrated that IL11 signaling is critical for decidualization in the mouse endometrium, and disruptions in this signaling pathway can lead to infertility [5][6].

References:
[1] A. Widjaja, S. Shekeran, E. Adami, J. Goh, J. Tan, V. Sivakumar, et al., A neutralizing il-11 antibody improves renal function and increases lifespan in a mouse model of alport syndrome, Journal of the American Society of Nephrology, vol. 33, no. 4, p. 718-730, 2022. https://doi.org/10.1681/asn.2021040577
[2] C. Denis, K. Kwack, S. Saffaripour, M. Srinivas, P. André, R. Schaub, et al., Interleukin 11 significantly increases plasma von willebrand factor and factor viii in wild type and von willebrand disease mouse models, Blood, vol. 97, no. 2, p. 465-472, 2001. https://doi.org/10.1182/blood.v97.2.465
[3] Y. Wang, Z. Niu, Y. Guo, L. Wang, F. Lin, & J. Zhang, Il-11 promotes the

treatment efficacy of hematopoietic stem cell transplant therapy in aplastic anemia model mice through a nf-κb/microrna-204/thrombopoietin regulatory axis, Experimental & Molecular Medicine, vol. 49, no. 12, p. e410-e410, 2017. https://doi.org/10.1038/emm.2017.217
[4] B. Gurfein, Y. Zhang, C. López, A. Argaw, A. Zameer, T. Moran, et al., Il-11 regulates autoimmune demyelination, The Journal of Immunology, vol. 183, no. 7, p. 4229-4240, 2009. https://doi.org/10.4049/jimmunol.0900622
[5] E. Dimitriadis, L. Robb, L. Yx, A. Enders, H. Martin, C. Stoikos, et al., Untitled, Reproductive Biology and Endocrinology, vol. 1, no. 1, p. 34, 2003. https://doi.org/10.1186/1477-7827-1-34
[6] N. Karpovich, P. Klemmt, J. Hwang, J. McVeigh, J. Heath, D. Barlow, et al., The production of interleukin-11 and decidualization are compromised in endometrial stromal cells derived from patients with infertility, The Journal of Clinical Endocrinology & Metabolism, vol. 90, no. 3, p. 1607-1612, 2005. https://doi.org/10.1210/jc.2004-0868

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.