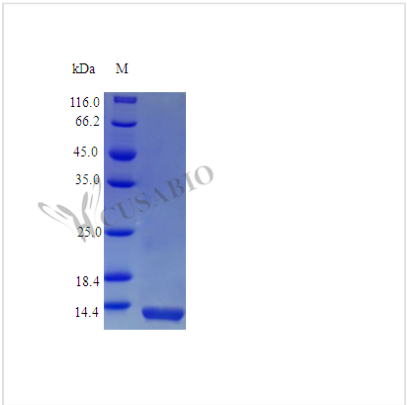
Recombinant Rhesus Macaque Interleukin-13 protein (IL13) (Active)

Product Code	CSB-AP003181MOW
Abbreviation	Recombinant Rhesus macaque IL13 protein (Active)
Uniprot No.	Q864V6
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4, 3% trehalose
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 5 ng/ml, corresponding to a specific activity of >2.0x10^5 IU/mg.
Purity	>98% as determined by SDS-PAGE.
Sequence	SPSPVPRSTA LKELIEELVN ITQNQKAPLC NGSMVWSINL TAGVYCAALE SLINVSGCSA IEKTQRMLNG FCPHKVSAGQ FSSLRVRDTK IEVAQFVKDL LVHLKKLFRE GRFN
Research Area	Immunology
Source	E.coli
Target Names	IL13
Expression Region	19-132aa
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	12.6 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	1724381
Image	



Description

The recombinant Rhesus Macaque IL13 is an active protein. It is produced in E. coli, involving co-cloning the target gene that encodes the 19-132aa of IL13 into an expression vector. This vector is introduced into E. coli cells, which are cultured under optimal conditions for protein expression. After cell lysis, the recombinant IL13 protein is purified using affinity chromatography. Protein purity is evaluated by SDS-PAGE, reaching over 98%. Its endotoxin content is less than 1.0 EU/μg as determined by the LAL method. Finally, the IL13 protein's activity is confirmed through a cell proliferation assay to ensure its functional integrity.

Rhesus Macaque IL13 plays a crucial role in immune responses, particularly in regulating type 2 immunity. IL13 is associated with Th2 skewed responses and is linked to eosinophil levels in the lungs of challenged animals. Studies have shown that IL13 levels in Rhesus macaques can influence the protective efficacy of vaccines, indicating its role in modulating immune reactions [1].

Furthermore, research has highlighted the presence of an $IL13^{+}GATA3^{+}$ Th2 subset in Rhesus macaques, which expresses eicosanoid pathway enzymes. This subset is accompanied by $IL1RL1^{+}GATA3^{+}$ regulatory T cells and a minor proportion of IgE^{+} plasma cells, demonstrating a tightly regulated type 2 immunity in these animals [2].

In cases of dermatological conditions like alopecia in Rhesus macaques, immune dysregulation marked by a shift towards a Th2 phenotype and changes in cytokine production, including IL13, have been noted. This immune dysregulation is akin to what is seen in human atopic dermatitis, emphasizing the relevance of IL13 in inflammatory responses and skin conditions in Rhesus macaques [3].

References:
[1] T. Morrison and E. Walsh, Subunit and virus-like particle vaccine approaches for respiratory syncytial virus,, p. 285-306, 2013. https://doi.org/10.1007/978-3-642-38919-1_14
[2] X. Dopico, Maintenance of caecal homeostasis by diverse adaptive immune cells in the rhesus macaque, Clinical & Translational Immunology, vol. 13, no. 5, 2024. https://doi.org/10.1002/cti2.1508
[3] J. Kramer, M. Fahey, R. Santos, A. Carville, L. Wachtman, & K. Mansfield, Alopecia in rhesus macaques correlates with immunophenotypic alterations in dermal inflammatory infiltrates consistent with hypersensitivity etiology, Journal of Medical Primatology, vol. 39, no. 2, p. 112-122, 2010. https://doi.org/10.1111/j.1600-0684.2010.00402.x

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.