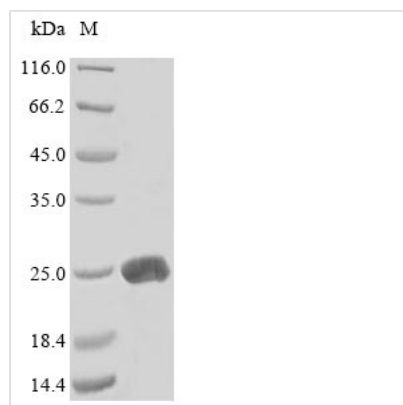




Recombinant Mouse Lymphotoxin-alpha (Lta)

Product Code	CSB-EP013218MO
Relevance	Cytokine that in its homotrimeric form binds to TNFRSF1A/TNFR1, TNFRSF1B/TNFR and TNFRSF14/HVEM. In its heterotrimeric form with LTB binds to TNFRSF3/LTBR. Lymphotoxin is produced by lymphocytes and cytotoxic for a wide range of tumor cells in vitro and in vivo.
Abbreviation	Recombinant Mouse Lta protein
Storage	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.
Uniprot No.	P09225
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	LSGVRFSAARTAHPLPQKHLTHGILKPAAHLVGYPQNSLLWRASTDRAFLR HGFSLSNNSLLIPTSGLYFVYSQVVFSGESCSPRAIPTPIYLAHEVQLFSSQYPF HVPLLSAQKSVYPGLQGPWVRSMYQGAVFLLSKGDQLSTHTDGISHLHFSPS SVFFGAFAL
Research Area	Cancer
Source	E.coli
Target Names	Lta
Protein Names	TNF-beta Tumor necrosis factor ligand superfamily member 1 Tnfb, Tnfsf1
Expression Region	34-202aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	23.6 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

The process of recombinant mouse Lymphotoxin-alpha (Lta) production starts with the identification and isolation of the gene that codes for the Lta protein (34-202aa). This gene is cloned into a plasmid vector along with the N-terminal 10xHis-tag and C-terminal Myc-tag gene, which is introduced into E. coli cells. The E. coli cells are cultured in bioreactors to express the protein. Once the cells have grown sufficiently, they are lysed to release the protein. The Lta protein is purified using affinity chromatography, with a purity of up to 85% as determined by SDS-PAGE.

Lta a cytokine within the TNF superfamily [1], plays a pivotal role in the development of lymphoid organs, cellular cytotoxicity, and immune system regulation [2]. Lta pairs with lymphotoxin-beta (LT- β) to form a heteromeric complex, integral to various immunological functions [3]. Research indicates that Lta is essential for forming lymphoid tissues, including germinal centers, and is critical for lymphoid organogenesis [4].

Lta is also associated with pro-inflammatory responses, enhancing T-cell activity and influencing survival rates in conditions such as melanoma [5]. Furthermore, Lta is vital for the development of intestinal lymphoid organs, like Peyer's patches and mesenteric lymph nodes [6]. In systemic lupus erythematosus, B cells secrete Lta and other pro-inflammatory cytokines, driving the inflammatory process and promoting the formation of germinal centers in inflamed tissues [7].

References:

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- [4] P. Koni, R. Sacca, P. Lawton, J. Browning, N. Ruddle, & R. Flavell, Distinct roles in lymphoid organogenesis for lymphotoxins α and β revealed in



lymphotoxin β -deficient mice, *Immunity*, vol. 6, no. 4, p. 491-500, 1997.

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[6] T. Spahn, M. Müller, W. Domschke, & T. Kucharzik, Role of lymphotoxins in the development of peyer's patches and mesenteric lymph nodes, *Annals of the New York Academy of Sciences*, vol. 1072, no. 1, p. 187-193, 2006. <https://doi.org/10.1196/annals.1326.029>

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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.