

Product Information

LYMPHOTOXIN- α 2/ β 1 Human, Recombinant Expressed in Sf 21 cells

Product Number **L5287**

Product Description

Lymphotoxin (LT) is composed of two members of the TNF family (LT- α) and (LT- β). These proteins exist in several trimeric forms. LT- α is secreted as a soluble homotrimer (LT- α 3, previously known as TNF- β) and complexes with membrane associated LT- β to generate two types of heterotrimers, LT- α 1/ β 2 and LT- α 2/ β 1.¹ The soluble LT- α 3 binds both TNF RI (p55) and TNF RII (p75). The predominant heterotrimer membrane bound LT- α 1/ β 2 binds and activates only the lymphotoxin β receptor (LT β R). In contrast, LT- α 2/ β 1 is capable of binding TNF RI, TNF RII and LT β R.

LT- α is a 25 kDa glycoprotein that is tightly regulated by lymphocytes. At the amino acid level, human and mouse LT- α are 74% homologous and human and mouse LT- β are 80% homologous.²

LT is expressed in activated CD4+ and CD8+ T cells, B and NK cells and in certain transformed cells. LT is expressed by activated naïve CD4 cells, unpolarized IL2-secreting effectors and Th1 effectors. LT is critical for normal lymphoid organ development.^{3,4} Genetic polymorphisms in TNF- α and LT- α have been linked to certain pathological conditions, including myasthenia gravis.⁵ A loss of LT expression and lack of TNF- α or LT- α secretions is associated with prior exposure to IL-4 and a Th2 phenotype.⁶

Reagents

A human recombinant form of lymphotoxin α 2/ β 1 is expressed in Sf 21 cells. The cDNA sequence encodes the mature human lymphotoxin (LT)- α (Leu 35-Leu 205) and the extracellular domain of LT- β (Leu 54-Gly 244). It is cloned downstream of a CD33 signal sequence. The resulting LT- α 2/ β 1 heterotrimer is purified from the supernatant.

Molecular Mass: Based on N-terminal amino acid sequencing, Met 17 (from the CD33 signal peptide sequence) is retained on both the rhLT- α and rhLT- β subunits. A small amount of LT- α with Thr 41 at the N-terminus is also present. LT- α and LT- β have calculated molecular masses of approximately 18 kDa and 18.5 kDa, respectively. As a result of glycosylation, multiple bands of approximately 18.25 kDa are present in SDS-PAGE under reducing conditions.

Purity: >95% as determined by SDS-PAGE, visualized by silver stain

Package size: 10 μ g

Formulation: Lyophilized from a 0.2 μ m filtered solution in phosphate-buffered saline (PBS) containing 0.50 mg of bovine serum albumin.

Endotoxin: < 0.1 ng/ μ g of LT- α 2/ β 1 as determined by LAL

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 μ g/ml.

Storage/Stability

Store at -20°C. Upon reconstitution; store at 2° - 8°C for one month. For extended storage, freeze working in aliquots. Repeated freezing and thawing is not recommended.

Product Profile

Lymphotoxin α 2/ β 1 is measured in a cytotoxicity assay using murine L929 cells. The ED₅₀ for this effect is typically 3 -11 ng/ml.

References

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