

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived
Leu35-Leu205 (LT α) & Leu54-Gly244 (LT β), both with an N-terminal Met & Thr41-Leu205 (LT α)
Accession # P01374 (LT α) & Q06643 (LT β)

N-terminal Sequence Analysis Met & Thr41 (LT α) & Met (LT β)

Structure / Form Noncovalently-linked heterotrimer

Predicted Molecular Mass 18 kDa (LT α), 18.5 kDa (LT β)

SPECIFICATIONS

SDS-PAGE 18-25 kDa, reducing conditions

Activity Measured in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews, N. and M.L. Neale (1987) in *Lymphokines and Interferons, A Practical Approach*. Clemens, M.J. *et al.* (eds): IRL Press. 221.
The ED₅₀ for this effect is typically 0.02–0.1 μ g/mL.

Endotoxin Level <0.10 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Lymphotoxin α (LT α), also known as tumor necrosis factor (TNF) β , and Lymphotoxin β (LT β) are members of the TNF family. LT α cDNA encodes a 205 amino acid secreted soluble protein with a 34 amino acid signal sequence. LT β cDNA encodes a 244 amino acid type II membrane protein with an N-terminal cytoplasmic domain (residues 1-18), a transmembrane region (residues 19-48), and an extracellular domain (residues 49-222). Secreted LT α assembles as a soluble homotrimer, LT α 3. In addition, secreted LT α also complexes with the 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). In contrast, the predominant membrane-bound heterotrimer, LT α 1/ β 2, binds only to the Lymphotoxin β receptor (LT β R). LT α 2/ β 1 is capable of binding LT β R, TNF RI (p55), and TNF RII (p75). LT plays a role in normal lymphoid organogenesis (2, 3). Transgenic LT α knock-out mice exhibited a loss in lymph node development, a change in splenic architecture, and impaired germinal center formation (4). LT is expressed by activated naive CD4 cells, unpolarized IL-2-secreting effectors, and Th1 effectors. A loss of LT expression and lack of TNF- α or TNF- β secretion is associated with prior exposure to IL-4 and a Th2 phenotype (5).

References:

1. Browning, *et al.* (1993) *Cell* **72**:847.
2. Ettinger, *et al.* (1996) *Proc. Natl. Acad. Sci. USA* **93**:13102.
3. Cuff, *et al.* (1998) *J. Immunol.* **161**:6853.
4. Browning, *et al.* (1997) *J. Immunol.* **159**:3288.
5. Gramaglia, *et al.* (1999) *J. Immunol.* **162**:1333.