Recombinant Human Lymphotoxin α2/β1

Catalog Number: 679-TX

DESCRIPTION

Source	*Spodoptera frugiperda*, *Sf* 21 (baculovirus)-derived Leu35-Leu205 (LTα) & Leu54-Gly244 (LTβ), both with an N-terminal Met & Thr41 - Leu205 (LTα) Accession # P01374 (LTα) & Q06643 (LTβ)
N-terminal Sequence Analysis	Met & Thr41 (LTα) & Met (LTβ)
Structure / Form	Noncovalently-linked heterotrimer
Predicted Molecular Mass	18 kDa (LTα), 18.5 kDa (LTβ)

SPECIFICATIONS

SDS-PAGE	18-26 kDa, reducing conditions
Activity	Measured in a cytotoxicity assay using L-929 mouse fibroblast cells. The ED_{50} for this effect is 0.5-3 ng/mL.
Endotoxin Level	<1.0 EU per 1 µg 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 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/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 - 244). Secreted LT-α assembles as a soluble homotrimer, LT-α3. In addition, secreted LT-α also complexes with the membrane associated LT-β to generate two types of heterotrimers, LT-α1/β2 and LT-α2/β1 (1). The soluble LT-α3 binds both TNF RI (p55) and TNF RII (p75). In contrast, the predominant membrane-bound heterotrimer, LT-α1/β2, binds only to the lymphotoxin β receptor (LTβR). LT-α2/β1 is capable of binding LTβR, 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) PNAS **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.

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