Recombinant Human Lymphotoxin-α/TNF-β

Catalog Number: 211-TB

DESCRIPTION

Source	*E. coli*-derived Leu35-Leu205, with an N-terminal Met Accession # P01374
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	18.8 kDa; The Recombinant Human Lymphotoxin-α/TNF-β preparations may also contain some N-terminally truncated bioactive forms of Lymphotoxin-α/TNF-β which lack 22, 15, or 3 N-terminal residues.

SPECIFICATIONS

SDS-PAGE	14-19 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 ED_{50} for this effect is typically 0.1-0.4 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

Tumor necrosis factor beta (TNF-β), also known as lymphotoxin-alpha (LT-α), and TNF-α, are two structurally and functionally related proteins that bind to the same cell surface receptors (TNF RI and TNF RII) and produce a vast range of similar, but not identical, effects. Among these effects is the ability to kill certain tumor cells directly, from which the names tumor necrosis factor and lymphotoxin both derive. Mature TNF-β/LT-α and TNF-α share approximately 35% protein sequence homology and the biologically active secreted forms of both proteins are homotrimers. Whereas TNF-α can exist as a type II membrane protein, TNF-β/LT-α possesses a typical signal peptide sequence and is a secreted protein. It has been shown that TNF-β/LT-α is also present on the cell surface of activated T, B and LAK cells as a heteromeric complex with LT-β, a type II membrane protein that is another member of the TNF ligand family. The genes for TNF-α, TNF-β/LT-α, and LT-β are closely linked within the major histocompatibility complex.

TNF-β/LT-α is expressed in activated T- and B-lymphocytes. In addition to its cytotoxic action on tumor cells, TNF-β/LT-α has been shown to be a mediator of inflammation and immune function. Evidence is also accumulating that TNF-β/LT-α and TNF-α are mediators in the pathogenesis of certain autoimmune diseases. TNF-β/LT-α has also been shown to have a role in lymphoid organ development. Human and mouse TNF-β/LT-α share approximately 74% homology in their amino acid sequence and exhibit cross-species activity.