

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived			
	rhLT α (Leu35-Leu205) Accession # P01374	GGGGS	rhLT β (Gln49-Gly244) Accession # Q06643	GGGGS
	N-terminus			C-terminus

N-terminal Sequence Leu35

Analysis

Structure / Form GS-linked heterotrimer

Predicted Molecular Mass 61 kDa

Mass

SPECIFICATIONS

SDS-PAGE	65-76 kDa, reducing conditions
Activity	Measured by its ability to induce IL-8 secretion by A375 human melanoma cells. The ED ₅₀ for this effect is 3-15 ng/mL.
Endotoxin Level	<0.10 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 μ g/mL in sterile PBS.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 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 alpha (LT- α), and Lymphotoxin beta (LT- β) are pro-inflammatory TNF superfamily ligands that play important roles in immune system development (1, 2). The 25 kDa mature human LT- α is a secreted protein that shares 75% amino acid (aa) sequence identity with mouse and rat LT- α (3, 4). The 33 kDa mature human LT- β is a type II transmembrane protein that shares 73% aa sequence identity with mouse and rat LT- β within common regions of their extracellular domains (5). Relative to the human protein, mouse and rat LT- β have a 66 aa or 65 aa insertion within the ECD, respectively. LT- α can be secreted as a homotrimer that binds and activates TNF RI/TNFRSF1A, TNF RII/TNFRSF1B, HVEM/TNFRSF14, and Troy/TNFRSF19 (6-8). LT- α is required for development of the spleen, lymph nodes, and Peyer's patches (9). It also regulates T cell homing to the gut and IgA induction (10). In addition, LT- α can form membrane-associated heterotrimers with two copies of LT- β on the surface of B, T, LTi, and ILC3 cells (2, 5, 11). The Lymphotoxin $\alpha 1/\beta 2$ heterotrimer binds and activates the Lymphotoxin beta R/TNFRSF3 (LT β R) which is expressed on macrophages, dendritic cells, hepatocytes, intestinal epithelial cells (IEC), follicular dendritic cells (FDC), and high endothelial venules (HEV) (2, 12, 13). LT β R also serves as a receptor for LIGHT/TNFSF14 (14). LT- $\alpha 1/\beta 2$ promotes the development of FDC networks and HEV in lymphoid tissue, the class switching of immature B cells for IgA production, and the production of IL-22 by ILCs (10, 15-17). It can be shed by ADAM17 or MMP-8 mediated cleavage, and the released heterotrimer circulates in the serum and is elevated in synovial fluid of rheumatoid arthritis patients (18).

References:

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