Biotinylated Recombinant Human Lymphotoxin alpha1/beta2 His-tag Avi-tag

Catalog Number: AVI8884

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human Lymphotoxin protein

Human Lymphotoxin alpha (Leu35-Leu205) Accession # P01374	GGGGS	Human Lymphotoxin beta (Gln49-Gly244) Accession # Q06643-1	GGGGS	Human Lymphotoxin beta (Gln49-Gly244) Accession # Q06643-1	HHHHHH, Avi-tag

N-terminus

N-terminal Sequence Analysis	Leu35
Structure / Form	GS-linked heterotrimer, biotinylated via Avi-tag
Predicted Molecular Mass	63 kDa

SPECIFICATIONS

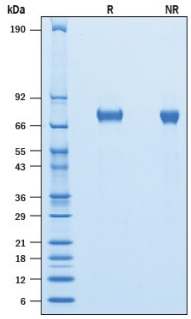
SDS-PAGE	69-80 kDa
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Lymphotoxin beta R Fc Chimera (Catalog # 629-LR) is immobilized at 25 ng/mL (100 µL/well), the concentration of Biotinylated Recombinant Human Lymphotoxin alpha1/beta2 His-tag Avi-tag (Catalog # AVI8884) that produces 50% of the optimal binding response is 0.75-4.5 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg 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 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
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.

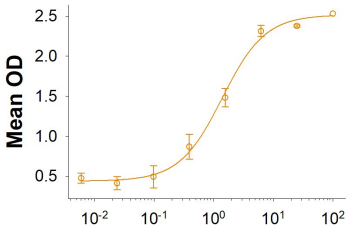
DATA

SDS-PAGE



2 µg/lane of Recombinant Human Lymphotoxin alpha1/beta2 His-tag Avi-tag (Catalog # AVI8884) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 69-80 kDa.

Binding Activity



When Recombinant Human Lymphotoxin βR/TNFRSF3 Fc Chimera (Catalog # 629-LR) is immobilized at 25 ng/mL, 100 µg/well, Biotinylated Recombinant Human Lymphotoxin alpha1/beta2 His-tag Avi-tag (Catalog # AVI8884) binds with an ED_{50} of 0.75-4.5 ng/mL.

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Catalog Number: AVI8884

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 α1/β2 heterotrimer binds and activates the Lymphotoxin beta R/TNFRSF3 (LTβR) which is expressed on macrophages, dendritic cells, hepatocytes, intestinal epithelial cells (IEC), follicular dendritic cells (FDC), and high endothelial venules (HEV) (2, 12, 13). LTβR also serves as a receptor for LIGHT/TNFSF14 (14). LT-α1/β2 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 homeostatic 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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