Sterile

#8230

Human Lymphotoxin-α/TNF-β/TNFSF1 (hLT-α)

- ☐ SC 10 µg (With Carrier)
- ☐ SF 10 µg (Carrier Free)
- ☐ LC 50 µg (With Carrier)
- ☐ LF 50 µg (Carrier Free)

Multi-milligram quantities available

rev. 04/24/12

Cell Signaling TECHNOLOGY®

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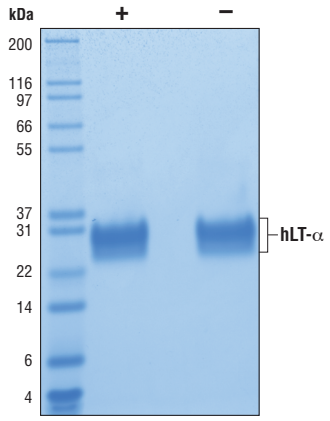
For Research Use Only. Not For Use In Diagnostic Procedures.

Source: Recombinant human LT-α (hLT-α) Pro36-Leu205 (Accession #NP_000586) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant hLT-α contains no "tags" and the nonglycosylated protein has a calculated MW of 18,548. DTT-reduced and non-reduced protein migrate as 24-31 kDa polypeptides. Lower mobility and heterogeneity in SDS-PAGE are due to glycosylation. The expected amino-terminal PGVGL of recombinant hLT-α was verified by amino acid sequencing.

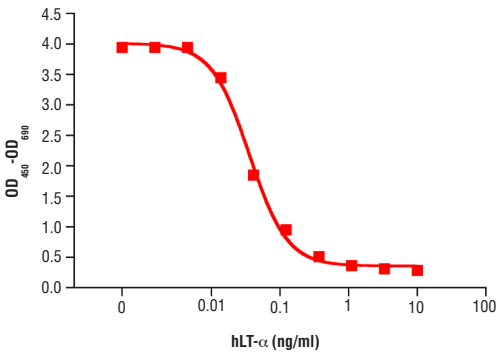
Endotoxin: Less than 0.01 ng endotoxin/1 µg hLT-α.

Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hLT-α. All lots are greater than 98% pure.



The purity of recombinant hLT-α was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hLT-α and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hLT-α was determined in an L-929 cell viability assay. The ED_{50} of each lot is between 15-150 pg/ml.



◀ *The viability of L-929 cells treated with increasing amounts of hLT-α in the presence of 2 ng/ml actinomycin D was determined. After 24 hour treatment with hLT-α, cells were incubated with a tetrazolium salt and the OD_{450} - OD_{650} was determined.*

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg hLT-α.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final hLT-α concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS or PBS containing protein to minimize absorption of hLT-α to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hLT-α should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: Lymphotoxin-α (LT-α), also known as TNF–β, is a member of the TNF superfamily of proteins (1). NK cells, T cells, B cells, and lymphoid tissue-inducer cells express LT-α (1). LT-α can be secreted as a soluble homotrimer or form membrane bound heterotrimers with lymphotoxin-β (LT α1β2 or LT α2β1) which can be cleaved from the cell surface by matrix metalloproteases (1,2). Soluble LT-α binds to and signals through TNFR1/TNFR2, activating the canonical NF-κB pathway (1). In contrast, LT α1β2 heterodimers bind to the LTβR receptor and activate the noncanonical NF-κB pathway (1). As a result, LT-α and TNF-α have overlapping functions. Soluble LT-α and LT α1β2 play key roles in lymphangiogenesis (3). The LT α1β2/LTβR axis is essential for the development of lymphoid tissue (1,3).

Background References:

(1) Wolf, M.J. et al. (2010) *Oncogene* 29, 5006-18.

(2) Young, J. et al. (2010) *Cytokine* 51, 78-86.

(3) Mounzer, R.H. et al. (2010) *Blood* 116, 2173-82.