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# Human Lymphotoxin- $\alpha$ /TNF- $\beta$ /TNFSF1 (hLT- $\alpha$ )



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MW (kDa):	UniProt ID:	Entrez-Gene Id:
28	#P01374	4049
<b>Background</b>	Lymphotoxin- $\alpha$ (LT- $\alpha$ ), also known as TNF- $\beta$ , is a member of the TNF superfamily of proteins (1). NK cells, T cells, B cells, and lymphoid tissue-inducer cells express LT- $\alpha$ (1). LT- $\alpha$ can be secreted as a soluble homotrimer or form membrane bound heterotrimers with lymphotoxin- $\beta$ (LT $\alpha$ 1 $\beta$ 2 or LT $\alpha$ 2 $\beta$ 1) which can be cleaved from the cell surface by matrix metalloproteases (1,2). Soluble LT- $\alpha$ binds to and signals through TNFR1/TNFR2, activating the canonical NF- $\kappa$ B pathway (1). In contrast, LT $\alpha$ 1 $\beta$ 2 heterodimers bind to the LT $\beta$ R receptor and activate the noncanonical NF- $\kappa$ B pathway (1). As a result, LT- $\alpha$ and TNF- $\alpha$ have overlapping functions. Soluble LT- $\alpha$ and LT $\alpha$ 1 $\beta$ 2 play key roles in lymphangiogenesis (3). The LT $\alpha$ 1 $\beta$ 2/LT $\beta$ R axis is essential for the development of lymphoid tissue (1,3).	
<b>Endotoxin</b>	Less than 0.01 ng endotoxin/1 $\mu$ g hLT- $\alpha$ .	
<b>Purity</b>	>98% as determined by SDS-PAGE of 6 $\mu$ g reduced (+) and non-reduced (-) recombinant hLT- $\alpha$ . All lots are greater than 98% pure.	
<b>Source / Purification</b>	Recombinant human LT- $\alpha$ (hLT- $\alpha$ ) Pro36-Leu205 (Accession #NP_000586) was expressed in human 293 cells at Cell Signaling Technology.	
<b>Bioactivity</b>	The bioactivity of recombinant hLT- $\alpha$ was determined in an L-929 cell viability assay. The ED <sub>50</sub> of each lot is between 15-150 pg/ml.	
<b>Background References</b>	<ol style="list-style-type: none"> <li>1. Wolf, M.J. et al. (2010) <i>Oncogene</i> 29, 5006-18.</li> <li>2. Young, J. et al. (2010) <i>Cytokine</i> 51, 78-86.</li> <li>3. Mounzer, R.H. et al. (2010) <i>Blood</i> 116, 2173-82.</li> </ol>	

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