Recombinant Mouse Lymphotoxin-α/TNF-β

Catalog Number: 749-TB/CF

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Leu34-Leu202, with an N-terminal 7-His tag Accession # P09225
N-terminal Sequence Analysis	His
Predicted Molecular Mass	19.5 kDa

SPECIFICATIONS

SDS-PAGE	25 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 0.125-0.5 µg/mL.
Endotoxin Level	<0.10 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, EDTA and DTT. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 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.

BACKGROUND

Tumor necrosis factor-beta (TNF-β), also known as lymphotoxin-alpha (LT-α), is a secreted homotrimeric glycoprotein belonging to the TNF superfamily and is designated TNFSF1B. It is produced by NK, T, and B cells. TNF-β was originally identified as protein that kills tumor cells in cell culture supernatants of a lymphoblastoid cell line. The TNF-β subunit also associates with the type II transmembrane TNF superfamily protein lymphotoxin beta (LTβ) to generate two types of heterotrimers designated as LTα1β2 (a single TNF-β chain non-covalently associated with two chains of LTβ), and LTα2β1 (1, 2). TNF-α, TNF-β, and LTβ form a subfamily of the TNF related ligands. Their genes are genetically linked within a compact cluster inside the major histocompatibility complex locus (2, 3). The soluble TNF-β binds and signals through TNF R1 and TNF R2. In contrast, the membrane-bound LTα1β2 interacts specifically with the LTβ receptor (LTβR), which does not bind TNF-β or TNF-α. Both TNFR1 and TNFR2 bind LTα2β1, which is recognized weakly by LTβ R (4, 5). TNF R1 and 2 express very broadly, while expression of LTβ R is restricted to stromal cells of lymphoid tissues. Herpesvirus entry mediator binds TNF-β in vitro (6). The physiological importance of such interaction, if it occurs *in vivo*, is unclear. Distinct functions attributed to TNF-β from transgenic knock-out mice include, loss of lymph node development, change in splenic architecture, impaired germinal center formation, and susceptibility to pulmonary tuberculosis (7, 8). TNF-β also has overlapping physiological functions with LTβ and TNF-α in lymphoid organogenesis (7). Mouse and human TNF-β share approximately 74% homology in their amino acid sequence.

References:

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