

DESCRIPTION

Source *E. coli*-derived
Asp26-Ile154, with an N-terminal Met
Accession # NP_037242

N-terminal Sequence Analysis Starts at Met

Predicted Molecular Mass 15 kDa

SPECIFICATIONS

SDS-PAGE 15 kDa, reducing conditions

Activity Measured in a cell proliferation assay using PHA-activated human peripheral blood lymphocytes (PBL). Yokota, T. *et al.* (1986) Proc. Natl. Acad. Sci. USA **83**:5894.
The ED₅₀ for this effect is 0.1-0.6 ng/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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 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.

BACKGROUND

IL-7 (interleukin-7) is a 25 kDa cytokine of the hemopoietin family that plays important roles in lymphocyte differentiation, proliferation, and survival (1-4). Rat IL-7 cDNA encodes 154 amino acids (aa) that include a 25 aa signal peptide. Mature rat IL-7 shares approximately 88% aa sequence identity with mouse IL-7 and 58-60% with human, equine, bovine, ovine, porcine, feline and canine IL-7. Human and mouse IL-7 exhibit cross-species activity (2, 3). IL-7 is produced by a wide variety of cells in primary and secondary lymphoid tissues, including stromal epithelial cells of the thymus, bone marrow, and intestines (1, 2, 5). Circulating IL-7 is limiting in healthy animals, but increases during lymphopenia (1, 6). IL-7 signals through a complex of the IL-7 Receptor alpha subunit (IL-7 R α , also known as CD127) with the common γ chain (γ_c) (1). The γ_c is also a subunit of the receptors for IL-2, -4, -9, -15, and -21 (1). IL-7 R α is expressed on double negative (CD4⁻CD8⁻) and CD4⁺ or CD8⁺ single positive naïve and memory T cells, but undergoes IL-7-mediated down-regulation and shedding during antigen-driven T cell proliferation, and is absent on regulatory T cells (1, 2, 6-11). IL-7 contributes to the maintenance of all naïve and memory T cells, mainly by promoting expression of the anti-apoptotic protein Bcl-2 (9-11). It is required for optimal T cell-dendritic cell interaction (6). IL-7 is expressed early in B cell development prior to the appearance of surface IgM (1, 5, 9). In mouse, IL-7 activation of IL-7 R α is critical for both T cell and B cell lineage development, while in humans, it is required for T cell but not for B cell development (4, 9, 12, 13). However, IL-7 functions in both mouse and human pro-B cells to suppress premature Ig light chain recombination during proliferative growth (14, 15).

References:

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