

DESCRIPTION

Source *E. coli*-derived
Asn49-Ser162
Accession # O97687

N-terminal Sequence Analysis Asn49

Structure / Form Monomer

Predicted Molecular Mass 13 kDa

SPECIFICATIONS

SDS-PAGE 10 kDa, reducing conditions

Activity Measured in a cell proliferation assay using MO7e human megakaryocytic leukemic cells. Avanzi, G. *et al.* (1988) *Br. J. Haematol.* **69**:359. The ED₅₀ for this effect is 0.2-1.2 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

Interleukin 15 (IL-15) is a widely expressed 14 kDa cytokine that is structurally and functionally related to IL-2 and plays an important role in many immunological diseases (1). Mature feline IL-15 shares 80%, 83%, 68%, and 68% amino acid sequence identity with canine, human, mouse, and rat IL-15, respectively (2). IL-15 binds with high affinity to IL-15 R α (3). It binds with lower affinity to a complex of IL-2 R β and the common gamma chain (γ c) which are also subunits of the IL-2 receptor complex (4). IL-15 associates with IL-15 R α in the endoplasmic reticulum, and this complex is expressed on the cell surface (5). The dominant mechanism of IL-15 action is known as transpresentation in which IL-15 and IL-15 R α are coordinately expressed on the surface of one cell and interact with complexes of IL-2 R β / γ c on adjacent cells (6). This enables cells to respond to IL-15 even if they do not express IL-15 R α (5). In human and mouse, soluble IL-15-binding forms of IL-15 R α can be generated by proteolytic shedding and bind up nearly all the IL-15 in circulation (7-9). Soluble IL-15 R α functions as an inhibitor that limits IL-15 action (3, 8). Ligation of membrane-associated IL-15/IL-15 R α complexes also induces reverse signaling that promotes activation of the IL-15/IL-15 R α expressing cells (10). IL-15 induces or enhances the differentiation, maintenance, or activation of multiple T cell subsets including NK, NKT, Th17, Treg, and CD8⁺ memory cells (11-15). An important component of these functions is the ability of IL-15 to induce dendritic cell differentiation and inflammatory activation (10, 13). IL-15 exhibits anti-tumor activity independent of its actions on NK cells or CD8⁺ T cells (16). It also inhibits the deposition of lipid in adipocytes, and its circulating levels are decreased in obesity (17).

References:

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