**DESCRIPTION**

**Source**  
*E. coli*-derived  
Asn49-Ser162  
Accession # P40933

**N-terminal Sequence Analysis**  
Asn49

**Predicted Molecular Mass**  
13 kDa

**SPECIFICATIONS**

**SDS-PAGE**  
10 kDa, reducing conditions

**Activity**  
Measured in a cell proliferation assay using MO7e human megakaryocytic leukemia cells.  
The ED₅₀ for this effect is 0.3-2.6 ng/mL.  
The specific activity of Recombinant Human IL-15 is approximately 4.5 x 10⁵ U/μg, which is calibrated against recombinant human IL-15 WHO International Standard (NIBSC code: 95/554).

**Endotoxin Level**  
<0.10 EU per 1 μg of the protein by the LAL method.

**Purity**  
>97%, by SDS-PAGE with silver staining.

**Formulation**  
Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. 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.

**DATA**

---

**Bioactivity**

Recombinant Human IL-15 (Catalog # 247-ILB) stimulates cell proliferation in the MO7e human megakaryocytic leukemia cell line. The ED₅₀ for this effect is 0.3-2.6 ng/mL.

---

**SDS-PAGE**

1 μg lane of Recombinant Human IL-15 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a major band at 10 kDa.
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, 2). Mature human IL-15 shares 70% amino acid sequence identity with mouse and rat IL-15. Alternative splicing generates isoforms of IL-15 with either a long or short signal peptide (LSP or SSP), and the SSP isoform is retained intracellularly (3). IL-15 binds with high affinity to IL-15Rα (4). It binds with lower affinity to a complex of IL-2Rβ and the common gamma chain (γc) which are also subunits of the IL-2 receptor complex (5). IL-15 associates with IL-15Rα in the endoplasmic reticulum, and this complex is expressed on the cell surface (6). The dominant mechanism of IL-15 action is known as transpresentation in which IL-15 and IL-15Rα are coordinately expressed on the surface of one cell and interact with complexes of IL-2Rβ/γc on adjacent cells (7). This enables cells to respond to IL-15 even if they do not express IL-15Rα (6). In human and mouse, soluble IL-15-binding forms of IL-15Rα can be generated by proteolytic shedding and bind up nearly all the IL-15 in circulation (8-10). Soluble IL-15Rα functions as an inhibitor that limits IL-15 action (4, 9). Ligation of membrane-associated IL-15/IL-15Rα complexes also induces reverse signaling that promotes activation of the IL-15/IL-15Rα expressing cells (11). IL-15 induces or enhances the differentiation, maintenance, or activation of multiple T cell subsets including NK, NKT, Th17, Treg, and CD8+ memory cells (12-16). An important component of these functions is the ability of IL-15 to induce dendritic cell differentiation and inflammatory activation (11, 14). IL-15 exhibits anti-tumor activity independent of its actions on NK cells or CD8+ T cells (17). It also inhibits the deposition of lipid in adipocytes, and its circulating levels are decreased in obesity (18).

References: