

## Recombinant Human IL-15 (carrier-free)

**Catalog # / Size:** 570302 / 10 µg  
570304 / 25 µg  
570306 / 100 µg  
570308 / 500 µg

**Source:** Human IL-15, amino acids Asn49-Ser162 (Accession# NM\_000585) was expressed in *E. coli*.

**Molecular Mass:** The 114 amino acid recombinant protein has a predicted molecular mass of 12,773 Da. The DTT-reduced protein migrates at approximately 9kDa and the non-reduced protein migrates at approximately 7kDa by SDS-PAGE. The N-terminal amino acid is Asn.

**Purity:** Purity is >98%, as determined by Coomassie stained SDS-PAGE.

**Endotoxin Level:** Endotoxin level is <0.1 EU/µg (<0.01ng/µg) protein as determined by the LAL method.

**Activity:** ED50 is 0.10-0.50 ng/ml, corresponding to a specific activity of 2-10 x 10<sup>6</sup> units/mg, as determined by the dose dependent stimulation of CTLL-2 cells proliferation.

**Preparation:** 10-100µg sizes are bottled at 200µg/mL. 500µg sizes and larger are bottled at the concentration indicated on the vial.

**Formulation:** 0.22 µm filtered protein solution is in 10mM NaH<sub>2</sub>PO<sub>4</sub>, 150mM NaCl, pH 7.2.

**Storage:** Unopened vial can be stored at 4°C for three months, at -20°C for six months, or at -70°C for one year. For maximum results, quick spin vial prior to opening. Stock solutions should be prepared at no less than 10µg/mL in buffer containing carrier protein such as 1% BSA or HSA or 10% FBS. For long term storage, aliquot into polypropylene vials and store in a manual defrost freezer. **Avoid repeated freeze/thaw cycles.**

## Applications:

**Applications:** Bioassay

**Recommended Usage:** Use when high specific biological activity is required.

**Application Notes:** This IL-15 protein is biologically active and can be used for *in vitro* assays.

**Application References:** 1. Correia DV, *et al.* 2011. *Blood* 118:992. (BA) PubMed

**Description:** IL-15 was discovered in the supernatant from a simian kidney epithelial cell line CV-1/EBNA, as a soluble factor capable of supporting proliferation of the IL-2-dependent cell line, CTLL-2 (1). Interleukin-15 (IL-15) is a regulatory cytokine, and it is produced by dendritic cells, epithelial cells, human stromal cell line (IMTLH), fibroblasts, and monocytes (2). IL-15 plays an important role in immune response and shares many functions with IL-2, for example, stimulating the proliferation of activated T cells (1, 2), NK cells (3) and B cells, and inducing immunoglobulin synthesis by B cells stimulated by anti-IgM or CD40 ligand (4). In addition, IL-15 promotes the development of dendritic cells (5), activates human neutrophils (6, 7) and induces the production of proinflammatory cytokines from macrophages (8). IL-15 acts as a bridge between innate and adaptive immunity because of its diverse roles in the immune system. IL-15 binds to heterotrimeric receptors composed of IL-15R $\alpha$ , IL-15R $\beta$ , and IL-15R $\gamma$ c. IL-15 shares with IL-2 the receptor chains  $\beta$  and  $\gamma$ c. IL-15 is normally not secreted in soluble form but is held on the cell surface bound to a unique receptor, IL-15R $\alpha$ , especially on dendritic cells. Cell-bound IL-15 then is presented in trans to T cells and NK cells and is recognized by the  $\gamma$ c receptor on these cells; such recognition maintains cell survival and intermittent proliferation (9).

**Antigen References:** 1. Grabstein K, *et al.* *Science* 264:965-968 1994.  
2. Ma A, *et al.* *Annu Rev Immunol* 24:657-679 2006.  
3. Meresse B, *et al.* *Immunity* 21:357-366 2004.  
4. Armitage RJ *et al.* *J Immunol* 154:483-490 1995.  
5. Pulendran B, *et al.* *Eur. J. Immunol.* 34:66-73 2004.  
6. Bouchard A, *et al.* *J. Leukoc. Biol.* 76:162-168 2004.  
7. Ratthe C, *et al.* 2004. *J. Leukoc. Biol.* 75:893.  
8. Feng T, *et al.* 2008. *Cell Immunol* 5:189.  
9. Rubinstein MP *et al.* *P. Natl. Acad. Sci. USA* 103:9166-9171 2006.



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