Recombinant Human IL-15 (Animal-Free)

Catalog# / Size	715902 / 10 µg
Regulatory Status	RUO
Other Names	Interleukin 15 (IL-15), MGC9721
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. IL-15 is a regulatory cytokine, and it is produced by dendritic cells, epithelial cells, human stromal cell line (IMTLH), fibroblasts, and monocytes. 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, NK cells and B cells, and inducing immunoglobulin synthesis by B cells stimulated by anti-IgM or CD40 ligand. In addition, IL-15 promotes the development of dendritic cells, activates human neutrophils and induces the production of proinflammatory cytokines from macrophages. 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-15Rα, IL-15Rβ, and IL-15Rγc. IL-15 shares with IL-2 the receptor chains β and γc. IL-15 is normally not secreted in soluble form but is held on the cell surface bound to a unique receptor, IL-15Rα, especially on dendritic cells. Cell-bound IL-15 then is presented in trans to T cells and NK cells and is recognized by the γc receptor on these cells; such recognition maintains cell survival and intermittent proliferation.

Product Details

Source	Human IL-15, amino acids Asn49-Ser162 (Accession# NM_000585), was expressed in *E. coli*.
Molecular Mass	The 115 amino acid N-terminal methionylated recombinant protein has a predicted molecular mass of 12.9 kD. The predicted N-terminal amino acid is Met.
Purity	>98%, as determined by Coomassie stained SDS-PAGE and HPLC analysis.
Formulation	Lyophilized, carrier-free.
Endotoxin Level	Less than 0.1 ng per µg of protein.
Storage & Handling	Unopened vial can be stored at -20°C or -70°C. For maximum results, quick spin vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. It is recommended to further dilute in a buffer, such as 5% Trehalose, and store working aliquots at -20°C to -80°C. **Avoid repeated freeze/thaw cycles.**
Activity	ED_{50} is ≤ 0.5 ng/ml, corresponding to a specific activity of ≥ 2.0 x 10^6 units/mg as determined by the dose-dependent stimulation of the proliferation of mouse CTLL-2 cells.
Application	Bioassay
Application Notes	This product is reactive with human and mouse.
Product Citations	1. Eken A, *et al.* 2020. North Clin Istanb. 0.513194444. PubMed

Antigen Details

Structure	Cytokine
Distribution	Adherent peripheral blood mononuclear cells, fibroblasts and epithelial cells.
Function	IL-15 stimulates the proliferation of activated T cells, NK cells and B cells, and inducing immunoglobulin synthesis by B cells stimulated by anti-IgM or CD40 ligand. In addition, IL-15 promotes the development of dendritic cells, activates human neutrophils and induces the production of proinflammatory cytokines from macrophages.
Interaction	T cells, NK cells.

Ligand/Receptor	IL-15Rα, IL-15Rβ, and IL-15γc.
Bioactivity	Stimulatory activities on the proliferation, survival and activation of T cells and NK cells, and the pathogenesis of rheumatoid arthritis via activating T cells; it also induces IL-17 production.
Cell Type	Hematopoietic stem and progenitors
Biology Area	Immunology, Innate Immunity, Stem Cells, Cell Biology
Molecular Family	Cytokines/Chemokines
Antigen References	1. Grabstein K, *et al.* 1994. *Science* 264:965. 2. Ma A, *et al.* 2006. *Annu. Rev. Immunol.* 24:657. 3. Meresse B, *et al.* 2004. *Immunity* 21:357. 4. Armitage RJ, *et al.* 1995. *J. Immunol.* 154:483. 5. Pulendran B, *et al.* 2004. Eur. J. Immunol. 34:66. 6. Bouchard A, *et al.* 2004. *J. Leukoc. Biol.* 76:162. 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.* 2006. *P. Natl. Acad. Sci. USA* 103:9166.
Gene ID	3600

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