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1. Description

Components	Human IL-15, research grade: Purified recombinant human interleukin 15.
Sizes	10 µg, 25 µg.
Biological activity	The ED ₅₀ is ≤0.5 ng/mL* corresponding to a specific activity of ≥2×10 ⁶ U/mg.
Primary structure	Single, non-glycosylated polypeptide chain (114 amino acid residues).
Molecular mass	12.8 kDa.
Source	Produced in <i>E. coli</i> .
Product format	Lyophilized from a 0.2 µm filtered buffer solution.
Stabilizer	Mannitol und trehalose.
Purity	>95% as determined by SDS-PAGE analysis.
Endotoxin level	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.
Storage	Lyophilized Human IL-15, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C. Avoid repeated freeze-thaw cycles.
Reconstitution	It is recommended to reconstitute lyophilized Human IL-15 with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

* The ED₅₀ is determined by proliferation assay using CTLL-2 cells according to Soman *et al.* The proliferation assay was calibrated with the reference standard for human IL-15 (NIBSC code 95/554) provided by the National Institute for Biological Standards and Control.

1.1 Background information

Interleukin 15 (IL-15) is a member of the four α-helix bundle cytokine family. It is produced by different cell types, including epithelial cells, monocytes, muscle and placenta cells. IL-15 is a potent lymphoid cell growth factor and shares many biological properties with IL-2. Like IL-2, IL-15 stimulates the proliferation of activated T cells and promotes the generation of cytotoxic T lymphocytes (CTLs). IL-2 and IL-15 also induce the generation, proliferation, and activation of NK cells as well as B cell growth and immunoglobulin production. In addition, IL-15 is important for the maintenance of CD8⁺ memory T cells. For binding and signaling IL-15 uses the unique IL-15 receptor α-chain, but shares the β- and γ-chain of the IL-2 receptor.

1.2 Applications

Human IL-15 can be used for a variety of applications, including:

- Activation and expansion of NK and NKT cells.
- *In vitro* differentiation of NK cells.
- *In vitro* T cell activation and expansion.
- *In vitro* T cell priming.²

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Soman, G. *et al.* (2009) MTS dye based colorimetric CTLL-2 cell proliferation assay for product release and stability monitoring of interleukin-15: assay qualification, standardization and statistical analysis. *J. Immunol. Methods* 348: 83–94.
2. Dietz, L. *et al.* (2010) Tracking human contact allergens: from mass spectrometric identification of peptide-bound reactive small chemicals to chemical-specific naive human T-cell priming. *Toxicol. Sci.* 117: 336–347.

All protocols and data sheets are available at www.miltenyibiotec.com.

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