Miltenyi Biotec

Human IL-3
research grade

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1. Description

Products

Human IL-3, research grade.

Recombinant human interleukin 3.

Content in µg	Order no.
10	130-093-908
25	130-093-909

Biological activity

The ED_{50} is ≤1 ng/mL corresponding to an activity of ≥1×10^6 IU/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using TF-1 cells according to Kitamura *et al*[1]. The proliferation assay was calibrated with the international standard for human IL-3 (NIBSC code 91/510) provided by the WHO/ National Institute for Biological Standards and Control.

Primary structure

Single, non-glycosylated polypeptide chain (133 amino acid residues).

Molecular mass

15.1 kDa.

Source

Produced in *E. coli*.

Product format

Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer

Mannitol and trehalose.

Purity

>97% 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-3, 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 or below. Avoid repeated freeze-thaw cycles.

Reconstitution

It is recommended to reconstitute lyophilized Human IL-3, research grade 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.

1.1 Background information

Interleukin 3 (IL-3) is a hematopoietic growth factor, which is produced mainly by activated T cells, but is also secreted by other cell types, including mast cells, eosinophils, and keratinocytes. The broad spectrum of biological activities of IL-3 includes the stimulation of the proliferation and differentiation of immature pluripotent hematopoietic stem cells and various lineage-committed progenitor cells, leading to the production of most of the major blood cell types. In addition, IL-3 also affects the functional activity of mature mast cells, basophils, eosinophils, and macrophages.

1.2 Applications

Human IL-3 can be used for a variety of applications, including:

- Induction of colony formation from hematopoietic progenitor cells in semi-solid medium *in vitro*, for example, $CD34^+$ cells from umbilical cord blood[2].
- *In vitro* differentiation studies, for example, of B lymphoid progenitors[3].
- Cultivation of plasmacytoid dendritic cells[4].
- *In vitro* expansion of hematopoietic stem cells.
- Investigation of mast cell or basophil function, for example, basophil interaction with blood vessels[5].
- Investigation of IL-3–mediated signaling pathways.

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

2. References

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140-002-362.08

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140-002-362.08

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