



Miltenyi Biotec

Human IL-6

research grade

10 µg
25 µg
100 µg

130-095-365
130-093-929
130-095-366

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1. Description

Components	Human IL-6, research grade: Purified recombinant human interleukin 6.
Sizes	10 µg, 25 µg, 100 µg.
Biological activity	The ED ₅₀ is ≤0.05 ng/mL* corresponding to a specific activity of ≥2×10 ⁷ IU/mg.
Primary structure	Single, non-glycosylated polypeptide chain (183 amino acid residues).
Molecular mass	20.8 kDa.
Source	Produced in <i>E. coli</i> .
Product format	Lyophilized from a 0.2 µm filtered buffer solution.
Stabilizer	Trehalose and mannitol (10 µg and 25 µg) or HSA (100 µg).
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-6, 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-6 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 (PBS).

* The ED₅₀ is determined by proliferation assay using mouse B9 hybridoma cells according to Gaines-Das and Poole.¹ The proliferation assay was calibrated with the international standard for human IL-6 (NIBSC code 89/548) provided by the WHO/ National Institute for Biological Standards and Control.

1.1 Background information

Interleukin 6 (IL-6), originally identified as a B cell differentiation factor, is a multifunctional cytokine which regulates immune responses, hematopoiesis, acute phase responses, and inflammatory reactions. It induces, for instance, the terminal maturation of activated

B cells into antibody-secreting plasma cells and acts in synergy with IL-3 to support the proliferation of hematopoietic stem cells. IL-6 is produced by many cell types, such as monocytes, fibroblasts, endothelial cells, and T cells. Disturbed IL-6 production has been associated with pathological processes, including inflammatory autoimmune diseases and cancer².

1.2 Applications

Human IL-6 can be used for a variety of applications, including:

- Induction of colony formation from hematopoietic progenitor cells in semi-solid medium.
- Replacement of feeder cells in the preparation of mouse and human hybridomas³.
- *In vitro* differentiation of Th17 cells⁴.

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

2. References

1. Gaines-Das, R.E. and Poole, S. (1993) The international standard for interleukin-6. Evaluation in an international collaborative study. *J. Immunol. Methods* 160: 147–153.
2. Rose-John, S. *et al.* (2006) Interleukin-6 biology is coordinated by membrane-bound and soluble receptors: role in inflammation and cancer. *J. Leukoc. Biol.* 80: 227–236.
3. Terada, S. *et al.* (1996) Cytokines involving gp130 in signal transduction suppressed growth of a mouse hybridoma cell line and enhanced its antibody production. *Cytokine* 8: 889–894.
4. Acosta-Rodriguez, E. V. *et al.* (2007) Interleukins 1β and 6 but not transforming growth factor-β are essential for the differentiation of interleukin 17-producing human T helper cells. *Nat. Immunol.* 8: 942–949.

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

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