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1. Description

Products	Mouse IL-7, research grade. Recombinant mouse interleukin 7.										
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Content in µg	Order no.										
2	130-094-636										
10	130-094-066										
100	130-098-222										
2x500	130-108-957										
Biological activity	The ED ₅₀ is ≤0.2 ng/mL corresponding to an activity of ≥5×10 ⁶ U/mg. ▲ Note: The ED ₅₀ is determined by proliferation assay using mouse 2E8 cells according to Ishihara, K. <i>et al.</i> ¹										
Primary structure	Single, non-glycosylated polypeptide chain (130 amino acid residues including an N-terminal methionine).										
Molecular mass	15.0 kDa.										
Source	Produced in <i>E. coli</i> .										
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.										
Stabilizer	None.										
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 Mouse IL-7, 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 Mouse IL-7, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 20 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 7 (IL-7) is a member of the type I cytokine family. The primary sources of IL-7 are non-hematopoietic stromal cells in bone marrow, thymus, and lymphoid organs and tissues. It is a pleiotropic cytokine with central roles in modulating T cell and B cell development and peripheral T cell homeostasis. IL-7 can act both as a T cell growth factor as well as a critical anti-apoptotic survival factor. IL-7 is related to IL-2 and signals through a heterodimeric receptor composed of the common cytokine signaling γ-chain and IL-7 receptor α-chain.

1.2 Applications

Mouse IL-7 may be used for a variety of applications, including:

- *In vitro* T cell expansion, for example, of naive T cells.
- *In vitro* differentiation of T cells, for example, of iNKT cells.
- Investigation of IL-7 mediated signaling pathways.

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

2. References

1. Ishihara, K. *et al.* (1991) Stromal-cell and cytokine-dependent lymphocyte clones which span the pre-B-to-B-cell transition. *Dev. Immunol.* 1: 149–161.
2. Dussiau, C. *et al.* (2015) Targeting IRAK1 in T-cell acute lymphoblastic leukemia. *Oncotarget.* 6: 18956–18965.
3. Laurenti, E. *et al.* (2015) CDK6 levels regulate quiescence exit in human hematopoietic stem cells. *Cell Stem Cell* 16 (3): 302–313.
4. Velardi, E. *et al.* (2014) Sex steroid blockade enhances thymopoiesis by modulating Notch signaling. *J. Exp. Med.* 211 (12): 2341–2349.
5. Engelmann S. *et al.* (2013) T cell-independent modulation of experimental autoimmune encephalomyelitis in ADAP-deficient mice. *J. Immunol.* 191 (10): 4950–4959.

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