

Recombinant Murine Interleukin-7

Alternate names:	IL7
Catalog No.:	PA1083
Quantity:	2 µg
Background:	<p>Interleukin 7 (IL-7), which is constitutively produced particularly by stromal cells from the bone marrow and thymus, plays a crucial role in T cell homeostasis. This cytokine is implicated in thymopoiesis since it sustains thymocyte proliferation and survival. It regulates peripheral naive T cell survival by modulating the expression of the anti-apoptotic molecule Bcl-2, and sustains peripheral T cell expansion in response to antigenic stimulation. Infection by the human immunodeficiency virus (HIV) leads to severe T lymphopenia and general immune dysfunction. Increased IL-7 plasma levels are generally observed in HIV-infected patients.</p>
Species:	Mouse
Source:	E. coli
Format:	<p>State: Lyophilized from a concentrated (1mg/ml) solution in water containing no additives</p> <p>Purity: >98% Greater than 98.0% as determined by:</p> <p>(a) Analysis by RP-HPLC.</p> <p>(b) Anion-exchange FPLC.</p> <p>(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel</p> <p>Recombinant Mouse IL-7 is purified by proprietary chromatographic techniques.</p> <p>Endotoxin Level: Less than 0.1 ng/µg (IEU/µg) of Murine IL-7</p> <p>Dimers: Less than 1% as determined by silver-stained SDS-PAGE gel analysis</p> <p>Reconstitution: It is recommended to reconstitute the lyophilized Murine IL-7 in sterile 18MΩ·cm H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.</p>
Description:	<p>Recombinant Murine IL-7 produced in E. coli is a single, non-glycosylated polypeptide chain containing 130 amino acids and having a molecular mass of 14897 Dalton.</p> <p>AA Sequence: The sequence of the first five N-terminal amino acids was determined and was found to be Met-Glu-Cys-His-Ile.</p> <p>Biological Activity: Murine IL-7 is fully biologically active when compared to standard. The ED₅₀ as determined by the dose-dependant stimulation of murine 2E8 cells is < 0.2 ng/ml, corresponding to a Specific Activity of 2 x 10⁶ IU/mg.</p> <p>Molecular weight: 15 kDa</p>
Add. Information:	<p>Gene Name IL7</p> <p>Protein synonyms/aliases: Interleukin-7 precursor (IL-7)</p> <p>Protein Family: belongs to the IL-7/IL-9 family. Domains: IPR000226</p> <p>Interleukin-7/interleukin-9</p>

Storage:

Lyophilized Recombinant Murine IL-7 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Recombinant Murine IL-7 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles. Shelf life: one year from despatch.

General Readings:

1. Roessler S, Györy I, Imhof S, Spivakov M, Williams RR, Busslinger M, et al. Distinct promoters mediate the regulation of Ebf1 gene expression by interleukin-7 and Pax5. *Mol Cell Biol.* 2007 Jan;27(2):579-94. Epub 2006 Nov 13. PubMed PMID: 17101802.
2. Feyen O, Göbel U, Schneider DT, Burdach SE, Niehues T. Long-term haematopoietic reconstitution and survival without interleukin-7 in a murine syngeneic bone marrow transplantation model. *Scand J Immunol.* 2006 Dec;64(6):601-8. PubMed PMID: 17083616.
3. Wallace DL, Bérard M, Soares MV, Oldham J, Cook JE, Akbar AN, et al. Prolonged exposure of naïve CD8+ T cells to interleukin-7 or interleukin-15 stimulates proliferation without differentiation or loss of telomere length. *Immunology.* 2006 Oct;119(2):243-53. PubMed PMID: 17005004.
4. Faller EM, McVey MJ, Kakal JA, MacPherson PA. Interleukin-7 receptor expression on CD8 T-cells is downregulated by the HIV Tat protein. *J Acquir Immune Defic Syndr.* 2006 Nov 1;43(3):257-69. PubMed PMID: 16967044.
5. Fukatsu K, Moriya T, Ikezawa F, Maeshima Y, Omata J, Yaguchi Y, et al. Interleukin-7 dose-dependently restores parenteral nutrition-induced gut-associated lymphoid tissue cell loss but does not improve intestinal immunoglobulin a levels. *JPEN J Parenter Enteral Nutr.* 2006 Sep-Oct;30(5):388-93; discussion 393-4. PubMed PMID: 16931606.
6. Storek J, Nash RA, McSweeney PA, Furst DE, Sullivan KM. Normal interleukin-7 (IL7) levels and normal IL7 response to CD4 T lymphopenia in patients with multiple sclerosis and systemic sclerosis. *Clin Immunol.* 2006 Oct;121(1):118-9. Epub 2006 Jul 17. PubMed PMID: 16844418.