

# Mouse Interleukin-7 (mIL-7)

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rev. 03/10/20

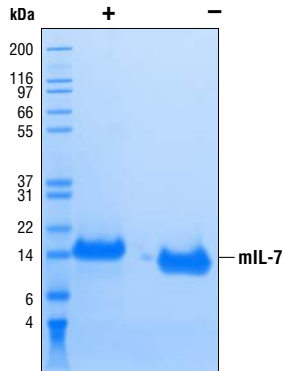
**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Source:** Recombinant mouse IL-7 (mIL-7) Glu26-Ile154 (Accession #NP\_032397) was produced in *E. coli* at Cell Signaling Technology.

**Molecular Characterization:** Recombinant mIL-7 has a Met on the amino terminus and has a calculated MW of 15,028. DTT-reduced and non-reduced protein migrate as 14 kDa polypeptides. The expected amino-terminal MECHI of recombinant mIL-7 was verified by amino acid sequencing.

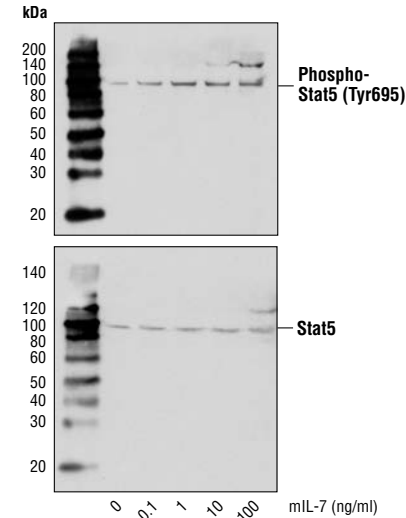
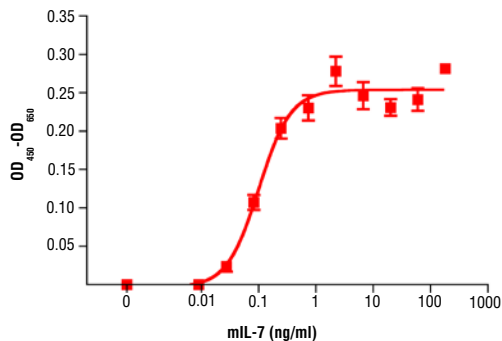
**Endotoxin:** Less than 0.01 ng endotoxin/1 µg mIL-7.

**Purity:** >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mIL-7. All lots are greater than 98% pure.



The purity of recombinant mIL-7 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mIL-7 and staining overnight with Coomassie Blue.

**Bioactivity:** The bioactivity of recombinant mIL-7 was determined in a 2E8 cell proliferation assay. The ED<sub>50</sub> of each lot is between 50-500 pg/ml.



Western blot analysis of extracts from 2E8 cells, untreated or treated with mIL-7 for 15 minutes, using Phospho-Stat5 (Tyr695) (C11C5) Rabbit mAb Antibody #9359 (upper) and Stat5 (3H7) Antibody #9358 (lower).

**Formulation:** Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg mIL-7.

**Carrier free:** Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

**Reconstitution:**

**With carrier:** Add sterile PBS or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final mIL-7 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

**Carrier free:** Add sterile PBS or PBS containing protein to minimize absorption of mIL-7 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock mIL-7 should be greater than 50 µg/ml.

**Storage:** Stable in lyophilized state at -20°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

**Maintain sterility.** Storage at -20°C should be in a manual defrost freezer.

**Applications:** Optimal concentration for the desired application should be determined by the user.

**Background:** IL-7 plays key a role in lymphopoiesis, and lymphoid homeostasis (1). Stromal and epithelial cells within the bone marrow and thymus produce IL-7 (1). The primary targets of IL-7 are T cells, B cells, and dendritic cells (1). IL-7 is crucial for T cell development, the importance of which is underscored by the lack of T cells in both mice and humans that are deficient in IL-7/IL-7R signaling (1,2). While IL-7 appears to be required for B cell development in mice, the role of IL-7 in human B cell development is unclear (1,3). In addition to its effects on T cell lymphopoiesis, IL-7 promotes the maintenance and survival of naïve and memory α/β T cells as well as γδ T cells (1). The IL-7 receptor is a heterodimer of the common γ chain, γc, and the IL-7 specific IL-7Rα(1). IL-7 activates PI3K/Akt, Jak 1/2, and Stat 1, 3, and 5 (1).

**Background References:**

- (1) Rochman, Y. et al. (2009) *Nat Rev Immunol* 9, 480-90.
- (2) Ma, A. et al. (2006) *Annu Rev Immunol* 24, 657-79.
- (3) Parrish, Y.K. et al. (2009) *J Immunol* 182, 4255-66.

◀ The proliferation of 2E8 cells treated with increasing concentrations of mIL-7 was assessed. After 48 hour treatment with mIL-7, cells were incubated with a tetrazolium salt and the OD<sub>450</sub> - OD<sub>650</sub> was determined.