

# Cytokines

## Mouse Recombinant IL-2



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### Interleukin 2

Catalog #	78081	20 µg
	78081.1	100 µg
	78081.2	1000 µg

## Product Description

Interleukin 2 (IL-2) is a monomeric cytokine that was originally identified as a T cell growth factor (Gaffen & Liu). It binds to a heterotrimeric receptor consisting of CD25, CD122, and CD132. Upon binding, it activates JAK3-, STAT5-, and AKT-dependent signaling pathways, which results in cellular proliferation and survival (Ma et al.). The majority of IL-2 is secreted by activated CD4+ and CD8+ T cells, although B cells and dendritic cells were found to produce IL-2 in small amounts. IL-2 downregulates immune responses to prevent autoimmunity during thymic development, influences the development of CD4+CD25+ T regulatory cells, and affects development of follicular helper T cells. IL-2 also controls inflammation by inhibiting Th17 differentiation (Banchereau et al.). Targeted deletions of the IL-2 gene in mice resulted in development of autoimmune hemolytic anemia, followed by ulcerative colitis. Similar effects were observed in mice that were deficient in IL-2 receptor  $\alpha$  (Gaffen & Liu).

## Product Information

Alternative Names:	Aldesleukin, Interleukin-2, T cell growth factor, TCGF
Accession Number:	P04351
Amino Acid Sequence:	MAPTSSSTSS STAEAQQQQQ QQQQQQQHLE QLLMDLQELL SRMENYRNLK LPRMLTFKFY LPKQATELKD LQCLEDELGP LRHVLDLTQS KSFQLEDAEN FISNIRVTVV KLKGSNTFE CQFDDESATV VDFLRWIAF CQSIISTSPQ
Predicted Molecular Mass:	17.4 kDa
Species:	Mouse
Cross Reactivity:	Human
Formulation:	Lyophilized from a sterile filtered aqueous solution containing sodium citrate, pH 4.0.
Source:	E. coli

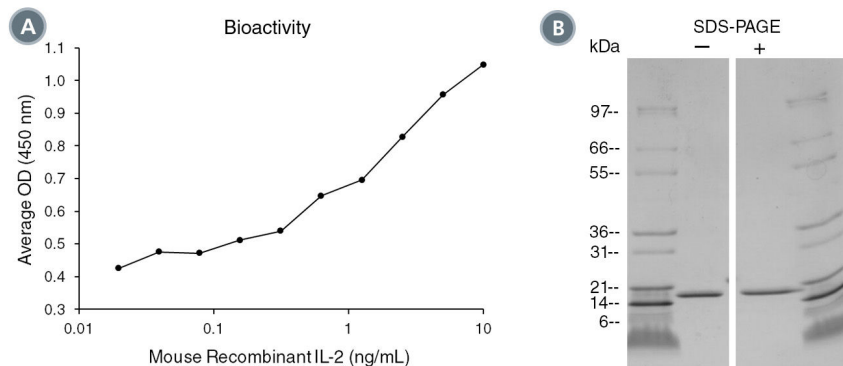
## Specifications

Activity:	The specific activity is $\geq 2 \times 10^5$ units/mg ( $EC_{50} \leq 5$ ng/mL) as determined by a cell proliferation assay of CTLL-2 cells.
Purity:	$\geq 95$ %
Endotoxin Level:	Measured by kinetic limulus amebocyte lysate (LAL) analysis and is $\leq 1$ EU/µg protein.

## Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Resuspend the product in sterile 10mM acetic acid containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately BSA is not required.

## Data



(A) The biological activity of Mouse Recombinant IL-2 was tested by its ability to promote the proliferation of CTLL-2 cells. Cell proliferation was measured after 3 days of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the protein at which cell proliferation is at 50% of maximum. The EC50 in the example above is 1.12 ng/mL.

(B) 1 µg of Mouse Recombinant IL-2 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IL-2 has a predicted molecular mass of 17.4 kDa.

## Related Products

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## References

- Banchereau J et al. (2012) From IL-2 to IL-37: the expanding spectrum of anti-inflammatory cytokines. *Nat Immunol* 13(10): 925–31.
- Gaffen SL & Liu KD. (2004) Overview of interleukin-2 function, production and clinical applications. *Cytokine* 28(3): 109–23.
- Ma A et al. (2006) Diverse functions of IL-2, IL-15, and IL-7 in lymphoid homeostasis. *Annu Rev Immunol* 24: 657–79.

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