Sterile

#5242

Mouse Interleukin-13 (mIL-13)

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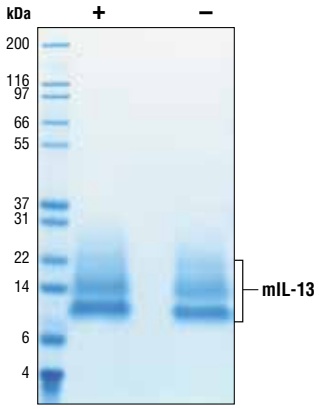
Source: Recombinant mouse IL-13 (mIL-13) Ser26-Phe131 (Accession #NP_032381) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant mIL-13 contains no "tags" and the nonglycosylated protein has a calculated MW of 11,677. DTT-reduced and non-reduced protein migrate as 12-20 kDa polypeptides. Lower mobility and heterogeneity in SDS-PAGE are due to glycosylation. The expected amino-terminal SVSLP of recombinant mIL-13 was verified by amino acid sequencing.

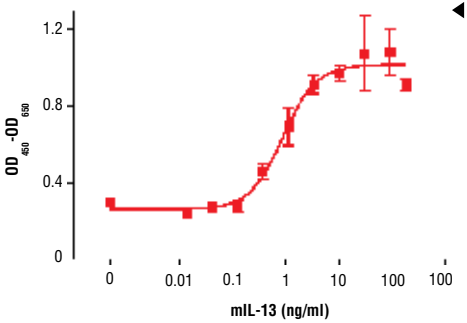
Endotoxin: Less than 0.01 ng endotoxin/1μg mIL-13.

Purity: >98% as determined by SDS-PAGE of 6 μg reduced (+) and non-reduced (-) recombinant mIL-13. All lots are greater than 98% pure.

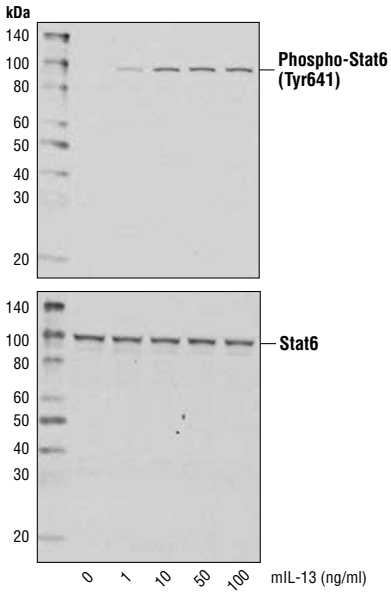


The purity of recombinant mIL-13 was determined by SDS-PAGE of 6 μg reduced (+) and non-reduced (-) recombinant mIL-13 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant mIL-13 was determined in a B9 cell proliferation assay. The ED_{50} of each lot is between 0.5 - 20 ng/ml.



◀ *The proliferation of B9 cells treated with increasing concentrations of mIL-13 was assessed. After 48 hour treatment with mIL-13, cells were incubated with a tetrazolium salt and the OD_{450} - OD_{650} was determined.*



Western blot analysis of extracts from TF-1 cells, untreated or treated with mIL-13 for 10 minutes, using Phospho-Stat6 (Tyr641) (C11A12) Rabbit mAb Antibody #9364 (upper) and Stat6 Antibody #9362 (lower).

Formulation: With carrier: Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.2 containing 20 μg BSA per 1 μg mIL-13.

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-13 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-13 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock mIL-13 should be greater than 50 μg/ml.

Storage: Stable in lyophilized state at 4°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-13 is produced by T cells and is important in the TH2 response. IL-13 targets include B cells, eosinophils, fibroblasts, mast cells and macrophages (1-3). IL-13 binds specifically to IL-13Rα1 that complexes with IL-4Rα to form the Type II IL-4R. Jak1 and Tyk2 are activated and signal through Stat3 and Stat6 (4). IL-13Rα2 is a different gene product, lacks the intracellular domain, does not complex with IL-4Rα and does not signal (1,4,5). The extracellular domain of IL-13Rα2 is often elevated in diseased states. IL-13 plays key roles in airway hyperresponsiveness (AHR) of allergic asthma (1,6,7) and modulates resistance to parasitic organisms (1).

Background References:

(1) Wynn, T.A. (2003) *Annu Rev Immunol* 21, 425-56.

(2) Katz, Y. et al. (1995) *Clin Exp Immunol* 101, 150-6.

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(4) Wills-Karp, M. and Finkelman, F.D. (2008) *Sci Signal* 1, pe55.

(5) Mentink-Kane, M.M. et al. (2004) *Proc Natl Acad Sci U S A* 101, 586-90.

(6) Wills-Karp, M. et al. (1998) *Science* 282, 2258-61.

(7) Nakajima, H. and Takatsu, K. (2007) *Int Arch Allergy Immunol* 142, 265-73.