Sterile

#12670

Mouse$_{His6}$ Interleukin-21 (m$_{His6}$IL-21)

- ☐ SC 10 µg (With Carrier)
- ☐ SF 10 µg (Carrier Free)
- ☐ LC 50 µg (With Carrier)
- ☐ LF 50 µg (Carrier Free)

Multi-milligram quantities available

New 06/13

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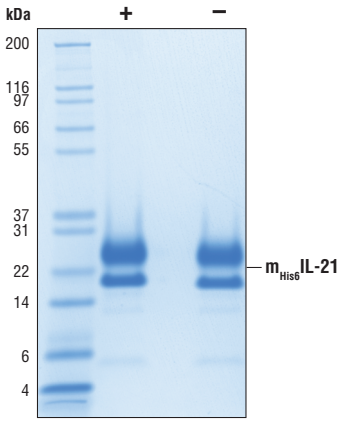
Source: Recombinant mouse $_{His6}$IL-21 (m$_{His6}$IL-21) Pro25-Ser146 (Accession #NP_068554.1) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Formula: Recombinant His6-tagged IL-21 has a calculated MW of 16952. DTT-reduced and non-reduced protein migrate as 18-28 kDa polypeptides. Heterogeneity in SDS PAGE is due to glycosylation. The expected amino terminus of recombinant m$_{His6}$IL-21 was verified by amino acid sequencing.

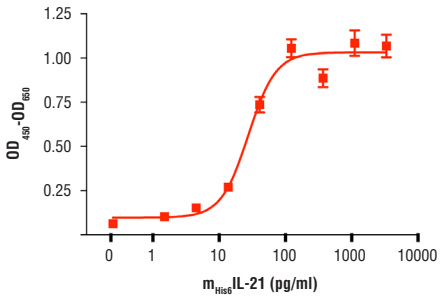
Endotoxin: Less than 0.01 ng endotoxin/1 µg m$_{His6}$IL-21.

Purity: >95% as determined by SDS-PAGE of 6 µg reduced (+) and nonreduced (-) recombinant m$_{His6}$IL-21. All lots are greater than 95% pure.



The purity of recombinant m$_{His6}$ IL-21 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant m$_{His6}$IL-21 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant m$_{His6}$IL-21 was determined in a B9 cell proliferation assay. The ED$_{50}$ of each lot is between and 20-80 pg/ml.



The proliferation of B9 cells treated with increasing concentrations of m$_{His6}$IL-21 was assessed. After a 72 hour treatment with m$_{His6}$IL-21, cells were incubated with a tetrazolium salt and the OD$_{450}$ - OD$_{650}$ was determined.

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of m$_{His6}$IL-21 in 10 mM HEPES pH 7.0 containing 20 µg BSA per 1 µg m$_{His6}$IL-21.

Carrier free: Lyophilized from a 0.22 µm filtered solution of m$_{His6}$IL-21 in 10 mM HEPES pH 7.0.

Reconstitution:
With carrier: Add sterile 10 mM HEPES pH 7.0 or 10 mM HEPES pH 7.0 containing 1% bovine or human serum albumin or 5-10% FBS to a final m$_{His6}$IL-21 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile 10 mM HEPES pH 7.0 or 10 mM HEPES pH 7.0 containing protein to minimize absorption of m$_{His6}$IL-21 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock m$_{His6}$IL-21 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-21 is a pleiotropic type I cytokine that is produced by CD4+ T cells, Th17 cells and NKT cells (1,2). The IL-21 receptor is a heterodimer that consists of an IL-21R and the common γ chain, γc (1). IL-21/IL-21R signaling involves activation of JAKs1/3, STAT3 and, to a lesser extent, STAT5 and STAT1 (1,2). IL-21 promotes B cell proliferation, survival and differentiation into plasma cells (3,4). IL-21 activates the cytolytic functions of CD8+ T cells and NK cells, and has been shown in mouse models to play a key role in immunity to chronic viral infections and promote anti-tumor immunity (5-7).

Background References:

(1) Leonard, W.J. et al. (2008) *J Leukoc Biol* 84, 348-56.

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(3) Parrish-Novak, J. et al. (2000) *Nature* 408, 57-63.

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(5) Pan, X.C. et al. (2013) *Oncol Lett* 5, 90-96.

(6) Fröhlich, A. et al. (2009) *Science* 324, 1576-80.

(7) Yi, J.S. et al. (2009) *Science* 324, 1572-6.