Cytokines

Mouse Recombinant IL-21

Interleukin 21

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Catalog #78116	10 µg
78116.1	50 µg
78116.2	1000 µg

Product Description

Interleukin 21 (IL-21) is a pleiotropic cytokine that is composed of four α-helical bundles and primarily produced by natural killer T (NKT) cells, T follicular helper (Tfh) cells, and Th17 cells (Spolski & Leonard 2008). IL-21 signals via receptor heterodimerization of IL-21 receptor and IL-2 receptor subunit gamma (IL-2RG or CD132), both of which have a common gamma-chain subunit and activate the JAK/STAT, MAPK, and PI3K pathways (Ozaki et al. 2000; Parrish-Novak et al.; Spolski & Leonard). IL-21 has been shown to have a critical role in regulating immunoglobulin production and differentiation of the pro-inflammatory Th17 population of cells (Nurieva et al.; Ozaki et al. 2002). Additionally, IL-21 specifically sustains CD8+ T cell effector activity and provides a mechanism of CD4+ T cell help during chronic viral infection (Elsaesser et al.). IL-21 signaling was also found critical for the development of type 1 diabetes in non-obese diabetic (NOD) mice (Sutherland et al.) and for control of T cell autoimmunity by regulatory B cells (Yoshizaki et al.).

Product Information

Alternative Names:	Interleukin-21, Za11
Accession Number:	Q9ES17.1
Amino Acid Sequence:	MPDRLLIRLR HLIDIVEQLK IYENDLDPEL LSAPQDVKGH CEHAAFACFQ KAKLKPSNPG NNKTFIIDLV AQLRRRLPAR RGGKKQKHIA KCPSCDSYEK RTPKEFLERL KWLLQKMIHQ HLS
Predicted Molecular Mass:	15.1 kDa
Species:	Mouse
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	*E. coli*

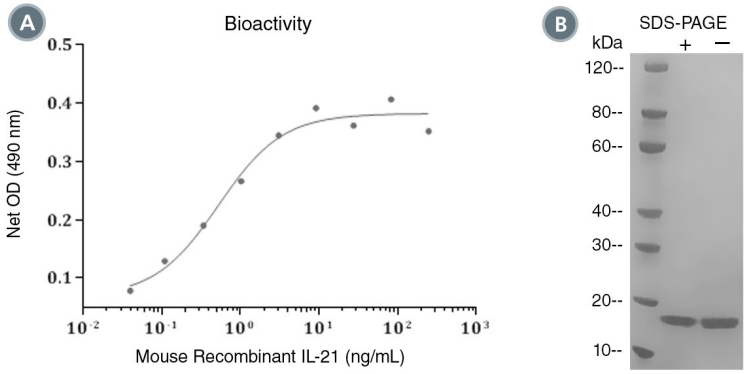
Specifications

Activity:	The specific activity is ≥ 1.0 x 10^6 units/mg (EC50 ≤ 1 ng/mL), as determined by the ability to stimulate human ANBL-6 cell proliferation.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse Recombinant IL-21 was tested by its ability to promote the proliferation of human ANBL-6 cells. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is less than 1 ng/mL.
(B) 2 µg of Mouse Recombinant IL-21 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant IL-21 has a predicted molecular mass of 15.1 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines, or contact us at techsupport@stemcell.com.

References

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Nurieva R et al. (2007) Essential autocrine regulation by IL-21 in the generation of inflammatory T cells. Nature 448(7152): 480–3.

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Parrish-Novak J et al. (2000) Interleukin 21 and its receptor are involved in NK cell expansion and regulation of lymphocyte function. Nature 408(6808): 57–63.

Spolski R & Leonard WJ. (2008) Interleukin-21: basic biology and implications for cancer and autoimmunity. Annu Rev Immunol 26: 57–79.

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Sutherland APR et al. (2009) Interleukin-21 is required for the development of type 1 diabetes in NOD mice. Diabetes 58(5): 1144–55.

Yoshizaki A et al. (2012) Regulatory B cells control T-cell autoimmunity through IL-21-dependent cognate interactions. Nature 491(7423): 264–8.