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Human Recombinant IL-21, ACF

Interleukin 21, animal component-free

Catalog #78193	10 µg
Catalog #78193.1	100 µg
Catalog #78193.2	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 heterodimers of the IL-21 receptor (IL-21R) and the IL2RG-encoded common cytokine receptor γ-chain (Parrish-Novak et al.; Ozaki K et al. 2000), and utilizes the JAK/STAT, MAPK, and PI3K pathways (Spolski & Leonard 2014). IL-21 has been shown to have a critical role in regulating immunoglobulin production and differentiation of the pro-inflammatory Th17 population of cells (Ozaki et al. 2002; Nurieva et al.). 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 NOD mice (Sutherland et al.) and control of T cell autoimmunity by regulatory B cells (Yoshizaki et al.). This product is animal component-free.

Product Information

Alternative Names: Interleukin-21, Za11

Accession Number: Q9HBE4

Amino Acid Sequence: MQDRHMIRMR QLIDIVDQLK NYVNDLVPEF LPAPEDVETN CEWSAFSCFQ KAQLKSANTG NNERIINVSI KKLKRKPPST NAGRRQKHRL TCPSCDSYEK KPPKEFLERF KSLLQKMIHQ HLSSRTHGSE DS

Predicted Molecular Mass: 15.4 kDa

Species: Human

Product Formulation: Lyophilized from a sterile-filtered solution containing sodium phosphate, pH 7.5.

Source: E. coli

Purity: ≥ 97%

Specifications

Activity: The specific activity is ≥ 2 x 10^5 units/mg (EC50 ≤ 5 ng/mL), as determined by a cell proliferation assay using B9 cells.

Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.1 EU/µg protein.

Preparation and Storage

Stability and Storage: Store at -20 to -80°C. 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 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data

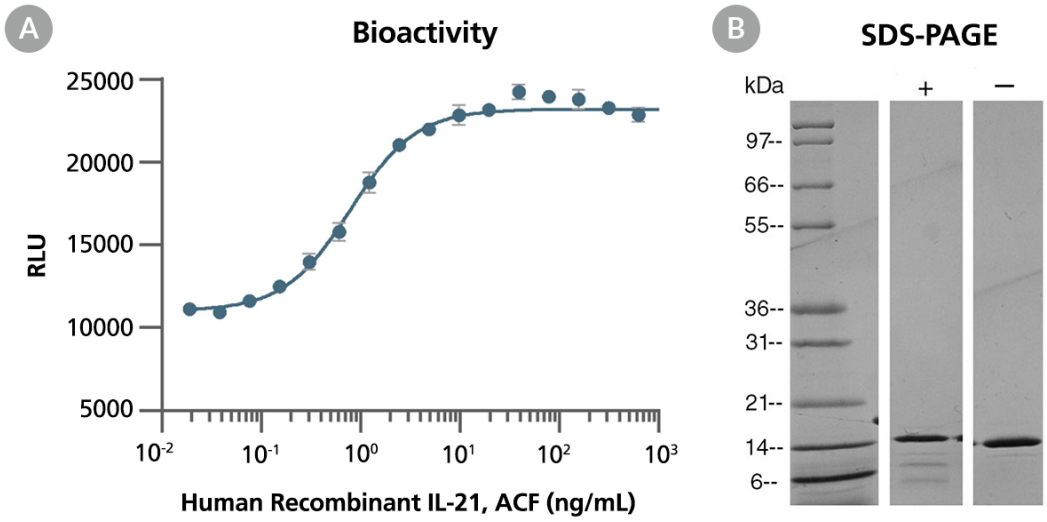

Figure 1. Biological Activity and Molecular Mass of Human Recombinant IL-21, ACF

(A) The biological activity of Human Recombinant IL-21, ACF was tested by its ability to promote the proliferation of B9 cells. The EC50 is defined as the effective concentration of the cytokine at which cell proliferation is at 50% of maximum. The EC50 in the example above is ≤ 5 ng/mL. (B) 1 µg of Human Recombinant IL-21, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-21, ACF has a predicted molecular mass of 15.4 kDa.

Related Products

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

References

Elsaesser H et al. (2009) IL-21 is required to control chronic viral infection. Science 324(5934): 1569–72.

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.

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