

Cytokines

Human Recombinant IL-21, ACF



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Interleukin 21, animal component-free

Catalog #	78193	10 µg
	78193.1	100 µg
	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:	MQDRHMIRMRLQLIDIVDQLK NYVNDLVPEF LPAPEDVETN CEWSAFSCFQ KAQLKSANTG NNERIINVSI KKLKRKPPST NAGRRQKHRL TCPSCDSYEK KPPKEFLERF KLLQKMIHQ HLSSRTHGSE DS
Predicted Molecular Mass:	15.4 kDa
Species:	Human
Cross Reactivity:	Reported to be species-specific
Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate, pH 7.5.
Source:	E. coli

Specifications

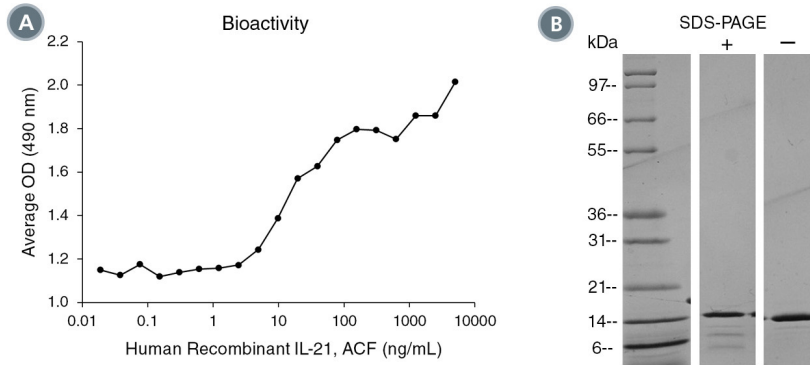
Activity:	The specific activity is $\geq 2.0 \times 10^4$ units/mg ($EC_{50} \leq 50$ ng/mL) as determined by a cell proliferation assay using B9 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein.

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. 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 $2 - 8^\circ\text{C}$ for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant IL-21, ACF was tested by its ability to promote the proliferation of B9 cells. Cell proliferation was measured using a fluorometric assay method. 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 18.2 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, 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.
- Ozaki K et al. (2002) A critical role for IL-21 in regulating immunoglobulin production. *Science* 298(5598): 1630–4.
- Ozaki K et al. (2000) Cloning of a type I cytokine receptor most related to the IL-2 receptor beta chain. *Proc Natl Acad Sci USA* 97(21): 11439–44.
- 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. (2014) Interleukin-21: a double-edged sword with therapeutic potential. *Nat Rev Drug Discov* 13(5): 379–95.
- Spolski R & Leonard WJ. (2008) Interleukin-21: basic biology and implications for cancer and autoimmunity. *Annu Rev Immunol* 26: 57–79.
- 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.

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2017 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.