

IL-21 (I-18): sc-17651

BACKGROUND

Interleukins are a group of cytokines produced by a wide variety of cells. Interleukin 21 (IL-21) is a small secreted interleukin molecule that has potent effects on lymphoid cells. Specifically, IL-21 stimulates B cell proliferation in an anti-CD40-dependent manner, and also activates anti-CD3-regulated stimulation of the proliferation of naive (CD45RA-positive) cytotoxic T cells. IL-21 is regulated by the T-helper cell subset-specific action of Tbet, which repressed its expression, and Nfatc2, which promotes its expression. IL-21 is most closely related to IL-2 and IL-15, and it plays an important role in the proliferation and maturation of natural killer (NK) cell populations from bone marrow, though this role differs between species. Human IL-21 enhances NK cell proliferation, but murine IL-21 inhibits NK cell proliferation.

REFERENCES

1. Ford, R., et al. 1995. Identification of B-cell growth factors (interleukin-14; high molecular weight-B-cell growth factors) in effusion fluids from patients with aggressive B-cell lymphomas. *Blood* 86: 283-293.
2. Gallagher, G., et al. 2000. Cloning, expression and initial characterization of interleukin-19 (IL-19), a novel homologue of human interleukin-10 (IL-10). *Genes Immun.* 1: 442-450.
3. Parrish-Novak, J., et al. 2000. Interleukin 21 and its receptor are involved in NK cell expansion and regulation of lymphocyte function. *Nature* 408: 57-63.
4. Blumberg, H., et al. 2001. Interleukin 20: discovery, receptor identification, and role in epidermal function. *Cell* 104: 9-19.
5. Vosshenrich, C.A., et al. 2001. Cytokines: IL-21 joins the γ (c)-dependent network? *Curr. Biol.* 11: R175-R177.
6. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605384. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Il21 (mouse) mapping to 3 B.

SOURCE

IL-21 (I-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of IL-21 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17651 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

IL-21 (I-18) is recommended for detection of IL-21 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IL-21 siRNA (m): sc-39663, IL-21 shRNA Plasmid (m): sc-39663-SH and IL-21 shRNA (m) Lentiviral Particles: sc-39663-V.

Molecular Weight of IL-21: 15 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chen, G., et al. 2010. Regulation of the IL-21 gene by the NF κ B transcription factor c-Rel. *J. Immunol.* 185: 2350-2359.
2. Hu, W., et al. 2011. Augmenting therapy of ovarian cancer efficacy by secreting IL-21 human umbilical cord blood stem cells in nude mice. *Cell Transplant.* 20: 669-680.
3. Yu, F., et al. 2012. Nanoparticle-based adjuvant for enhanced protective efficacy of DNA vaccine Ag85A-ESAT-6-IL-21 against *Mycobacterium tuberculosis* infection. *Nanomedicine* 8: 1337-1344.
4. He, X., et al. 2012. Antitumor efficacy of viable tumor vaccine modified by heterogenetic ESAT-6 antigen and cytokine IL-21 in melanomatous mouse. *Immunol. Res.* 52: 240-249.
5. Dou, J., et al. 2012. Protection against *Mycobacterium tuberculosis* challenge in mice by DNA vaccine Ag85A-ESAT-6-IL-21 priming and BCG boosting. *Int. J. Immunogenet.* 39: 183-190.
6. He, X., et al. 2013. ESAT-6-gpi DNA vaccine augmented the specific anti-tumour efficacy induced by the tumour vaccine B16F10-ESAT-6-gpi/IL-21 in a mouse model. *Scand. J. Immunol.* 78: 69-78.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.