SANTA CRUZ BIOTECHNOLOGY, INC.

IL-12 p70 (14L7): sc-74150

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The interleukins (ILs) are a broad family of well characterized cytokines, primarily of hematopoietic cell origin. As new cytokines are molecularly characterized, they are assigned an IL number to maintain a standard nomenclature. ILs are secreted by immune cells that regulate a wide range of immune system functions. IL-12 is secreted by macrophages and human B-lymphoblastoid cells in response to antigenic stimulation. This IL is responsible for the differentiation of naive $CD4^+$ T cells into type 1 helper T cells that produce interferon-γ (IFN-γ). It also activates production of tumor necrosis factor α (TNF-α) from T and natural killer (NK) cells, and it inhibits IL-4 mediated suppression of IFN-γ. IL-12 also has anti-angiogenic activity since the production of IFN-γ increases the production of inducible protein-10 (IP-10). IL-12 p40 represents a subunit of this IL that is induced by several pathogens. IL-12 p70 is a subunit of IL-12 that is controlled through both the p35 and p40 genes in a cell type-specific fashion.

REFERENCES

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2. Muller-Suur, C., et al. 2002. Organic dust-induced interleukin-12 production activates T and natural killer cells. Eur. Respir. J. 20: 686-690.
3. Noble, A., et al. 2003. $CD8^+$ immunoregulatory cells in the graft-versus-host reaction: CD8 T cells activate dendritic cells to secrete interleukin-12/interleukin-18 and induce T helper 1 autoantibody. Immunology 109: 476-486.
4. Yamamoto, N., et al. 2004. Essential role for the p40 subunit of interleukin-12 in neutrophil-mediated early host defense against pulmonary infection with *Streptococcus pneumoniae:* involvement of interferon-γ. Microbes Infect. 6: 1241-1249.
5. Puertollano, M.A., et al. 2005. Assessment of interleukin-12, interferon-γ, and tumor necrosis factor α secretion in sera from mice fed with dietary lipids during different stages of *Listeria monocytogenes* infection. Clin. Diagn. Lab. Immunol. 12: 1098-1103.
6. Entleutner, M., et al. 2005. Impact of interleukin-12, oxidative burst, and iNOS on the survival of murine fecal peritonitis. Int. J. Colorectal Dis. 21: 64-70.
7. Gafa, V., et al. 2006. Human dendritic cells following *Aspergillus fumigatus* infection express the CCR7 receptor and a differential pattern of interleukin-12 (IL-12), IL-23, and IL-27 cytokines, which lead to a Th1 response. Infect. Immun. 74: 1480-1489.
8. Rentzos, M., et al. 2006. Interleukin-12 is reduced in cerebrospinal fluid of patients with Alzheimer's disease and frontotemporal dementia. J. Neurol. Sci. 249: 110-114.
9. Saito, S., et al. 2006. Regulation of lipopolysaccharide-induced interleukin-12 production by activation of repressor element GA-12 through hyperactivation of the ERK pathway. Clin. Vaccine Immunol. 13: 876-883.

CHROMOSOMAL LOCATION

Genetic locus: IL12A (human) mapping to 3q25.33, IL12B (human) mapping to 5q33.3.

SOURCE

IL-12 p70 (14L7) is a mouse monoclonal antibody raised against full length recombinant IL-12 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

IL-12 p70 (14L7) is recommended for detection of IL-12 p70 heterodimer of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with IL-12 p40, IL-12 p35 or IL-23.

Molecular Weight of IL-12 p70: 70 kDa.

SELECT PRODUCT CITATIONS

1. Zhang, L., et al. 2022. Myeloid cell-specific deletion of Capns1 prevents macrophage polarization toward the M1 phenotype and reduces interstitial lung disease in the bleomycin model of systemic sclerosis. Arthritis Res. Ther. 24: 148.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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