

IL-12 (500-M59): sc-65355

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 (mainly macrophages, B cells or T cells) that regulate a wide range of immune system functions. The functions of different ILs vary from regulating inflammatory and immune responses, functioning as autocrine factor and regulating and/or inhibiting other ILs. IL-12 is secreted by macrophages and human B-lymphoblastoid cells in response to antigenic stimulation. It 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).

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, γ interferon 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.
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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 (mouse) mapping to 3 E1, Il12b (mouse) mapping to 11 B1.1.

SOURCE

IL-12 (500-M59) is a rat monoclonal antibody raised against recombinant IL-12 of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IL-12 (500-M59) is recommended for detection of IL-12 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of IL-12: 70 kDa.

SELECT PRODUCT CITATIONS

1. Rajendran, R., et al. 2021. Oligodendrocyte-specific deletion of FGFR1 reduces cerebellar inflammation and neurodegeneration in MOG₃₅₋₅₅-induced EAE. *Int. J. Mol. Sci.* 22: 9495.

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.