

IL-4 (8D4-8): sc-53710

BACKGROUND

Interleukin-4 (IL-4), also designated B cell stimulatory factor-1, is a glycosylated cytokine secreted by activated T lymphocytes, basophils and mast cells. The secreted IL-4 protein promotes the growth and differentiation of cells that participate in immune defense by favoring such events as the expansion of the Th2 lineage relative to Th1 cells. These T helper cell subsets are defined by their pattern of cytokine secretion: Th1 cells secrete IL-2, TNF β and IFN- γ , while Th2 cells secrete IL-4, IL-5 and IL-10. Another key immunological function of IL-4 is to induce immunoglobulin class switching. IL-4 has been shown to induce the production of IgE and enhance IgG₄ secretion by B cells, but suppress the production of IgM, IgA, IgG₁, IgG₂ and IgG₃. It has been determined that Stat6 is rapidly tyrosine phosphorylated following stimulation of IL-3 or IL-4, but is not detectably phosphorylated following stimulation with IL-2, IL-12 or erythropoietin.

REFERENCES

1. Yokota, T., et al. 1986. Isolation and characterization of a human interleukin cDNA clone, homologous to mouse B-cell stimulatory factor 1, that expresses B cell- and T cell-stimulating activities. *Proc. Natl. Acad. Sci. USA* 83: 5894-5898.
2. Grabstein, K., et al. 1986. Purification to homogeneity of B cell stimulating factor. A molecule that stimulates proliferation of multiple lymphokine-dependent cell lines. *J. Exp. Med.* 163: 1405-1414.
3. Kamogawa, Y., et al. 1993. The relationship of IL-4- and IFN- γ -producing T cells studied by lineage ablation of IL-4-producing cells. *Cell* 75: 985-995.
4. Kopf, M., et al. 1993. Disruption of the murine IL-4 gene blocks Th2 cytokine responses. *Nature* 362: 245-248.
5. Kotowicz, K., et al. 1993. Human immunoglobulin class and IgG subclass regulation: dual action of interleukin-4. *Eur. J. Immunol.* 23: 2250-2256.
6. Hou, J., et al. 1994. An interleukin-4-induced transcription factor: IL-4 Stat. *Science* 265: 1701-1706.
7. Izuhara, K., et al. 1996. Signal transduction pathway of interleukin-4 and interleukin-13 in human B cells derived from X-linked severe combined immunodeficiency patients. *J. Biol. Chem.* 271: 619-622.
8. Helbig, G., et al. 2006. The achievement of complete molecular remission after autologous stem cell transplantation for T cell lymphoma with associated hypereosinophilia, rare aberration t(6;11) and elevated IL-4 and IgE. *Haematologica* 91: ECR42.
9. Perkins, C., et al. 2006. IL-4 induces IL-13-independent allergic airway inflammation. *J. Allergy Clin. Immunol.* 118: 410-419.

CHROMOSOMAL LOCATION

Genetic locus: IL4 (human) mapping to 5q31.1.

SOURCE

IL-4 (8D4-8) is a mouse monoclonal antibody raised against recombinant full length IL-4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IL-4 (8D4-8) is recommended for detection of IL-4 of human origin by flow cytometry (1 μ g per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IL-4 siRNA (h): sc-39623, IL-4 shRNA Plasmid (h): sc-39623-SH and IL-4 shRNA (h) Lentiviral Particles: sc-39623-V.

Molecular Weight of IL-4: 18 kDa.

SELECT PRODUCT CITATIONS

1. Domingos, P.L., et al. 2012. OX40⁺ T lymphocytes and IFN- γ are associated with American tegumentary leishmaniasis pathogenesis. *An. Bras. Dermatol.* 87: 851-855.

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.



See **IL-4 (HIL41): sc-12723** for IL-4 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647.