

## IL-4 (H-129): sc-7919

### 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 $\beta$  and IFN- $\gamma$ , 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 IgG<sub>4</sub> secretion by B cells, but suppress the production of IgM, IgA, IgG<sub>1</sub>, IgG<sub>2</sub> and IgG<sub>3</sub>. 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  $\gamma$ -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.

### CHROMOSOMAL LOCATION

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

### SOURCE

IL-4 (H-129) is a rabbit polyclonal antibody raised against amino acids 25-153 of IL-4 of human origin.

### PRODUCT

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

### APPLICATIONS

IL-4 (H-129) is recommended for detection of IL-4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

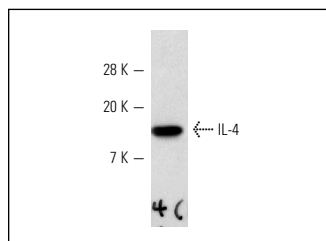
Suitable for use as control antibody for IL-4 siRNA (h): sc-39623, IL-4 shRNA Plasmid (h): sc-39623-SH and IL-4 shRNA (h) Lentiviral Particles: sc-39623-V.

Molecular Weight of IL-4: 18 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

### DATA



IL-4 (H-129): sc-7919. Western blot analysis of human recombinant IL-4.

### SELECT PRODUCT CITATIONS

1. Cui, Y., et al. 2008. Effect of mammogenic hormones on the expression of FGF-7, FGF-10 and their receptor in mouse mammary gland. *Sci. China, C, Life Sci.* 51: 711-717.
2. Kikuchi, A., et al. 2008. IL-2 and proteoglycans synergistically induce antigen-specific B-cell responses—a possible immune response in the hyperplastic myasthenia thymus. *J. Neuroimmunol.* 205: 37-43.
3. Sano, Y., et al. 2013. Thymic stromal lymphopoietin expression is increased in the horny layer of patients with atopic dermatitis. *Clin. Exp. Immunol.* 171: 330-337.
4. Li, G., et al. 2013. Lyn mitigates mouse airway remodeling by downregulating the TGF- $\beta$ 3 isoform in house dust mite models. *J. Immunol.* 191: 5359-5370.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.