

IL-4 (HIL41): sc-12723

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.

CHROMOSOMAL LOCATION

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

SOURCE

IL-4 (HIL41) is a mouse monoclonal antibody raised against full length IL-4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IL-4 (HIL41) 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 μ g per 100-500 μ 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).

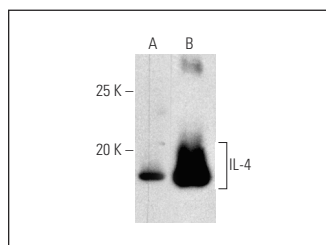
Suitable for use as control antibody for IL-4 siRNA (h): sc-39623, IL-4 shRNA Plasmid (h): sc-39623-SH and IL-4 shRNA (h) Lentiviral Particles: sc-39623-V.

Molecular Weight of IL-4: 18 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Western blot analysis of human recombinant IL-4. Antibodies tested include: IL-4 (HIL41): sc-12723 (A) and IL-4 (HIL44): sc-13555 (B).

SELECT PRODUCT CITATIONS

1. Hoshino, M., et al. 2005. Effect of suplatast tosilate on goblet cell metaplasia in patients with asthma. Allergy 60: 1394-1400.
2. Lee, H.K., et al. 2018. Neuronal IL-4R α modulates neuronal apoptosis and cell viability during the acute phases of cerebral ischemia. FEBS J. 285: 2785-2798.
3. Aboushousha, T., et al. 2021. IL-4, IL-17 and CD163 immunexpression and IL-6 gene polymorphism in chronic hepatitis C patients and associated hepatocellular carcinoma. Asian Pac. J. Cancer Prev. 22: 1105-1113.
4. Her, Y., et al. 2022. *Pinus thunbergii* bark extract rich in flavonoids promotes hair growth in dorsal skin by regulating inflammatory cytokines and increasing growth factors in mice. Mol. Med. Rep. 25: 100.
5. Schrijver, D.P., et al. 2023. Resolving sepsis-induced immunoparalysis via trained immunity by targeting interleukin-4 to myeloid cells. Nat. Biomed. Eng. 7: 1097-1112.

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.