

IL-5R α (N-20): sc-21904

BACKGROUND

Interleukin 5 (IL-5) is a soluble T cell-derived factor, also known as T cell-replacing factor (TRF), that induces B cell and eosinophil growth and differentiation. IL-5 exerts its biological activity through the IL-5 receptor (IL-5R), which is composed of two chains: an α chain that binds IL-5 with low affinity and a β chain that does not bind IL-5, but together with the IL-5 α chain, constitutes the high affinity IL-5 receptor. The cytoplasmic domain of both the α and β chains is essential for signal transduction. Specifically, the membrane-proximal proline-rich sequence of the cytoplasmic domain of the IL-5R receptor α subunit, IL-5R α , is critical for the IL-5 induced proliferative response, expression of nuclear proto-oncogenes and tyrosine phosphorylation of cellular proteins, such as JAK1 and JAK2. Alternative splicing of the IL-5R α gene produces several isoforms, including a membrane-anchored isoform and a soluble isoform. The soluble isoform competes with IL-5 for binding to IL-5R and inhibits IL-5-mediated receptor activation and inflammatory mediator production, and, therefore, may be useful in treating asthma.

REFERENCES

1. Takatsu, K., et al. 1980. Antigen-induced T cell-replacing factor (TRF). I. Functional characterization of a TRF-producing helper T cell subset and genetic studies on TRF production. *J. Immunol.* 124: 2414-2422.
2. Tuypens, T., et al. 1992. Organization and chromosomal localization of the human IL-5R α gene. *Eur. Cytokine Netw.* 3: 451-459.
3. Kikuchi, Y., et al. 1994. Biochemical and functional characterization of soluble form of IL-5 receptor α (sIL-5R α). Development of ELISA system for detection of sIL-5R α . *J. Immunol. Methods* 167: 289-298.
4. Takaki, S., et al. 1994. A critical cytoplasmic domain of the interleukin-5 (IL-5) receptor α chain and its function in IL-5-mediated growth signal transduction. *Mol. Cell. Biol.* 14: 7404-7413.
5. Kotsimbos, A.T., et al. 1997. IL-5 and IL-5 receptor in asthma. *Mem. Inst. Oswaldo Cruz* 92: 75-91.
6. Monahan, J., et al. 1997. Attenuation of IL-5-mediated signal transduction, eosinophil survival, and inflammatory mediator release by a soluble human IL-5 receptor. *J. Immunol.* 159: 4024-4034.

CHROMOSOMAL LOCATION

Genetic locus: IL5RA (human) mapping to 3p26.2.

SOURCE

IL-5R α (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of IL-5R α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-21904 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IL-5R α (N-20) is recommended for detection of IL-5R α of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for IL-5R α siRNA (h): sc-29369, IL-5R α shRNA Plasmid (h): sc-29369-SH and IL-5R α shRNA (h) Lentiviral Particles: sc-29369-V.

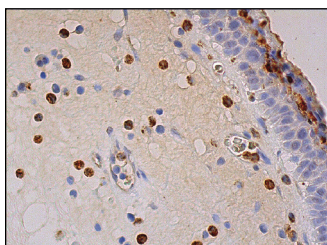
Molecular Weight of IL-5R α isoforms: 75/105 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



IL-5R α (N-20): sc-21904. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing cytoplasmic staining of subset of respiratory epithelial cells and leukocytes.

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 or our catalog for detailed protocols and support products.