

IL-31 (N-13): sc-47072

BACKGROUND

IL-31 is a T cell cytokine that is preferentially produced by T helper type 2 cells. IL-31 signals through a heterodimeric receptor composed of the IL-31 receptor (IL-31R) and the oncostatin M receptor (OSM). This receptor complex recruits JAK1, JAK2, Stat1, Stat3 and Stat5 signaling pathways, as well as the PI 3-kinase/AKT cascade. SHP-2 and Shc adapter molecules are also recruited and contribute to an increased activation of the MAP kinase pathway in response to IL-31. Overexpression of IL-31 in mice results in pruritus and skin dermatitis resembling human atopic dermatitis (AD). Comparisons between skin from patients with AD and healthy skin showed IL-31R expression at higher levels on epidermal keratinocytes in AD samples. Infiltrating cells, more numerous in skin from patients with AD compared with that of healthy individuals, expressed IL-31 mRNA. IL-31 may participate in the cause of itch sensation and promote scratching behavior in NC/Nga mice with atopic dermatitis, and may represent a novel target for antipruritic drug development.

REFERENCES

1. Diveu, C., et al. 2004. Predominant expression of the long isoform of gp130-like (GPL) receptor is required for interleukin-31 signaling. *Eur. Cytokine Netw.* 15: 291-302.
2. Dreuw, A., et al. 2004. Characterization of the signaling capacities of the novel gp130-like cytokine receptor. *J. Biol. Chem.* 279: 36112-36120.
3. Dillon, S.R., et al. 2004. Interleukin-31, a cytokine produced by activated T cells, induces dermatitis in mice. *Nat. Immunol.* 5: 752-760.
4. Takaoka, A., et al. 2005. Expression of IL-31 gene transcripts in NC/Nga mice with atopic dermatitis. *Eur. J. Pharmacol.* 516: 180-181.
5. Takaoka, A., et al. 2006. Involvement of IL-31 on scratching behavior in NC/Nga mice with atopic-like dermatitis. *Exp. Dermatol.* 15: 161-167.
6. Sonkoly, E., et al. 2006. IL-31: a new link between T cells and pruritus in atopic skin inflammation. *J. Allergy Clin. Immunol.* 117: 411-417.
7. Bilsborough, J., et al. 2006. IL-31 is associated with cutaneous lymphocyte antigen-positive skin homing T cells in patients with atopic dermatitis. *J. Allergy Clin. Immunol.* 117: 418-425.

CHROMOSOMAL LOCATION

Genetic locus: IL31 (human) mapping to 12q24.31; IL31 (mouse) mapping to 5 F.

SOURCE

IL-31 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of IL-31 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-47072 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IL-31 (N-13) is recommended for detection of IL-31 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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-31 siRNA (h): sc-60838, IL-31 shRNA Plasmid (h): sc-60838-SH and IL-31 shRNA (h) Lentiviral Particles: sc-60838-V.

Molecular Weight of IL-31: 18 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

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.

MONOS
Satisfaction
Guaranteed

Try **IL-31 (E-2): sc-515415**, our highly recommended monoclonal alternative to IL-31 (N-13).