SANTA CRUZ BIOTECHNOLOGY, INC.

IL-31 (K-20): sc-47071

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 PI3 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 (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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-47071 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

IL-31 (K-20) is recommended for detection of IL-31 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) 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.

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.