

## IL-31R (A-12): sc-515465

### 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. Dreu, 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.

### CHROMOSOMAL LOCATION

Genetic locus: IL31RA (human) mapping to 5q11.2; IL31ra (mouse) mapping to 13 D2.2.

### SOURCE

IL-31R (A-12) is a mouse monoclonal antibody raised against amino acids 241-454 mapping within an internal region of IL-31R of human origin.

### PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-31R (A-12) is available conjugated to agarose (sc-515465 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515465 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515465 PE), fluorescein (sc-515465 FITC), Alexa Fluor<sup>®</sup> 488 (sc-515465 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515465 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515465 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515465 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515465 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515465 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA

### APPLICATIONS

IL-31R (A-12) is recommended for detection of IL-31R of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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-31R siRNA (h): sc-60839, IL-31R siRNA (m): sc-60840, IL-31R shRNA Plasmid (h): sc-60839-SH, IL-31R shRNA Plasmid (m): sc-60840-SH, IL-31R shRNA (h) Lentiviral Particles: sc-60839-V and IL-31R shRNA (m) Lentiviral Particles: sc-60840-V.

Molecular Weight of IL-31R isoforms 1-4: 82/86/75/41 kDa.

Molecular Weight of IL-31R isoforms 5-8: 77/70/58/67 kDa.

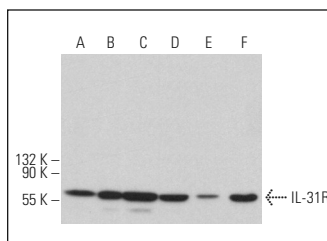
Molecular Weight of IL-31R isoforms 9-12: 64/69/71/84 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, RAW 264.7 whole cell lysate: sc-2211 or HeLa whole cell lysate: sc-2200.

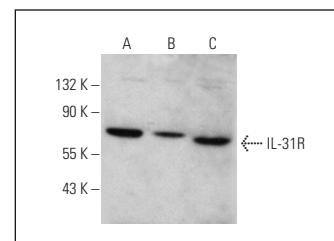
### RECOMMENDED SUPPORT REAGENTS

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

### DATA



IL-31R (A-12): sc-515465. Western blot analysis of IL-31R expression in RAW 264.7 (A), NIH/3T3 (B), BJAB (C), NAMALWA (D), Ramos (E) and U-87 MG (F) whole cell lysates.



IL-31R (A-12): sc-515465. Western blot analysis of IL-31R expression in HEK293 (A), RAW 264.7 (B) and HeLa (C) whole cell lysates.

### 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.