SANTA CRUZ BIOTECHNOLOGY, INC.

IL-12Rβ1 (E-6): sc-166805

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

IL-12, a heterodimeric cytokine composed of two disulfide-bonded glycoprotein subunits, p35 and p40, has pleiotrophic activities including stimulation of the proliferation of activated T and NK cells, induction of IFN-γ production by PBMCs, enhancement of the lytic activity of NK/LAK cells and promotion of T helper (Th) 1 cell responses. The T cell response to IL-12 is mediated through two receptor proteins, designated IL-12Rβ1 and IL-12Rβ2. The genes encoding human IL-12Rβ1 and IL-12Rβ2 map to chromosomes 19p13.11 and 1p31.3, respectively. Increased IL-12Rβ2 expression is crucial in regulating Th1 differentiation, whereas IL-12Rβ1 expression is less restricted. Inhibition of IL-12 activity may provide treatment for diseases associated with pathologic Th1 responses, such as multiple sclerosis or Crohn's disease, while administration of recombinant IL-12 may aid in the treatment for allergic disorders and asthma.

REFERENCES

1. Gubler, U., et al. 1991. Coexpression of two distinct genes is required to generate secreted bioactive cytotoxic lymphocyte maturation factor. Proc. Natl. Acad. Sci. USA 88: 4143-4147.
2. Wolf, S.F., et al. 1991. Cloning of cDNA for natural killer cell stimulatory factor, a heterodimeric cytokine with multiple biologic effects on T and natural killer cells. J. Immunol. 146: 3074-3081.
3. Manetti, R.P., et al. 1993. Natural killer cell stimulatory factor interleukin 12 [IL-12] induces T helper type 1 (Th1)-specific immune responses and inhibits the development of IL-4-producing Th cells. J. Exp. Med. 177: 1199-1204.
4. Yamamoto, K., et al. 1997. Assignment of IL12RB1 and IL12RB2, interleukin-12 receptor β 1 and β 2 chains, to human chromosome 19 band p13.1 and chromosome 1 band p31.2, respectively, by *in situ* hybridization. Cytogenet. Cell Genet. 77: 257-258.
5. Kawashima, T., et al. 1998. Interleukin-12 induces tyrosine phosphorylation of an 85 kDa protein associated with the interleukin-12 receptor β 1 subunit. Cell. Immunol. 186: 39-44.
6. Gately, M.K., et al. 1998. The interleukin-12/interleukin-12-receptor system: role in normal and pathologic immune responses. Annu. Rev. Immunol. 16: 495-521.
7. Parrello, T., et al. 2000. Upregulation of the IL-12 receptor β 2 chain in Crohn's disease. J. Immunol. 165: 7234-7239.

CHROMOSOMAL LOCATION

Genetic locus: IL12RB1 (human) mapping to 19p13.11; Il12rb1 (mouse) mapping to 8 B3.3.

SOURCE

IL-12Rβ1 (E-6) is a mouse monoclonal antibody raised against amino acids 1-300 of IL-12Rβ1 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

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

APPLICATIONS

IL-12Rβ1 (E-6) is recommended for detection of IL-12Rβ1 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-12Rβ1 siRNA (h): sc-35649, IL-12Rβ1 siRNA (m): sc-35650, IL-12Rβ1 shRNA Plasmid (h): sc-35649-SH, IL-12Rβ1 shRNA Plasmid (m): sc-35650-SH, IL-12Rβ1 shRNA (h) Lentiviral Particles: sc-35649-V and IL-12Rβ1 shRNA (m) Lentiviral Particles: sc-35650-V.

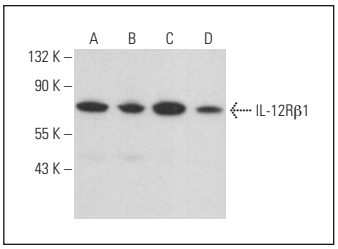
Molecular Weight of IL-12Rβ1: 100 kDa.

Positive Controls: IL-12Rβ1 (h4): 293T Lysate: sc-177380, CCRF-CEM cell lysate: sc-2225 or CCRF-HSB-2 cell lysate: sc-2265.

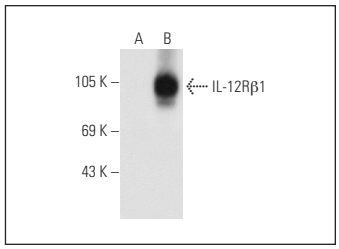
RECOMMENDED SUPPORT REAGENTS

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™ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



IL-12Rβ1 (E-6): sc-166805. Western blot analysis of IL-12Rβ1 expression in CCRF-CEM (**A**), CCRF-HSB-2 (**B**), K-562 (**C**) and TK-1 (**D**) whole cell lysates.



IL-12Rβ1 (E-6): sc-166805. Western blot analysis of IL-12Rβ1 expression in non-transfected: sc-117752 (**A**) and human IL-12Rβ1 transfected: sc-177380 (**B**) 293T 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.