SANTA CRUZ BIOTECHNOLOGY, INC.

IL-12B p40 (G-6): sc-374651

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The interleukins (ILs) are a broad family of well characterized cytokines, primarily of hematopoietic cell origin. ILs are secreted by immune cells (mainly macrophages, B cells or T cells) that regulate a wide range of immune system functions. The functions of different ILs vary from regulating inflammatory and immune responses, functioning as an autocrine factor and regulating and/or inhibiting other ILs. IL-12 is responsible for the differentiation of naive $CD4^+$ T cells into type 1 helper T cells that produce interferon-γ (IFN-γ). It also activates production of tumor necrosis factor α (TNFα) from T and natural killer (NK) cells. IL-12 is a heterodimer composed of subunits IL-12A p35 and IL-12B p40. The p40 subunit of IL-12 also combines with p19, a protein that shows no biological activity by itself, to form a biologically active, composite cytokine, IL-23. IL-23 shares some *in vivo* functions with IL-12, including activation of the transcription factor Stat4 and IFN-γ production and proliferation in PHA blast T cells, as well as in CD45RO (memory) T cells.

REFERENCES

1. Oppmann, B., et al. 2000. Novel p19 protein engages IL-12p40 to form a cytokine, IL-23, with biological activities similar as well as distinct from IL-12. Immunity 13: 715-725.
2. Wiekowski, M.T., et al. 2001. Ubiquitous transgenic expression of the IL-23 subunit p19 induces multiorgan inflammation, runting, infertility, and premature death. J. Immunol. 166: 7563-7570.
3. Frucht, D.M. 2002. IL-23: a cytokine that acts on memory T cells. Sci. STKE 2002: pe1.
4. Cooper, A.M., et al. 2002. Mice lacking bioactive IL-12 can generate protective, antigen-specific cellular responses to mycobacterial infection only if the IL-12 p40 subunit is present. J. Immunol. 168: 1322-1327.
5. Muller-Suur, C., et al. 2002. Organic dust-induced interleukin-12 production activates T and natural killer cells. Eur. Respir. J. 20: 686-690.
6. Lo, C.H., et al. 2003. Antitumor and antimetastatic activity of IL-23. J. Immunol. 171: 600-607.
7. Ha, S.J., et al. 2004. IL-23 induces stronger sustained CTL and Th1 immune responses than IL-12 in hepatitis C virus envelope protein 2 DNA immunization. J. Immunol. 172: 525-531.
8. Lieberman, L.A., et al. 2004. IL-23 provides a limited mechanism of resistance to acute toxoplasmosis in the absence of IL-12. J. Immunol. 173: 1887-1893.
9. Verreck, F.A., et al. 2004. Human IL-23-producing type 1 macrophages promote but IL-10-producing type 2 macrophages subvert immunity to (myco)bacteria. Proc. Natl. Acad. Sci. USA 101: 4560-4565.

CHROMOSOMAL LOCATION

Genetic locus: IL12B (human) mapping to 5q33.3.

SOURCE

IL-12B p40 (G-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 297-333 at the C-terminus of IL-12B p40 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374651 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

IL-12B p40 (G-6) is recommended for detection of IL-12B p40 of 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).

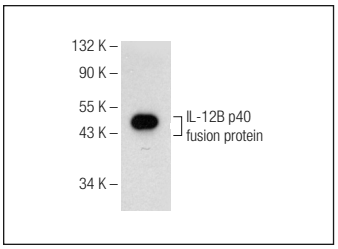
Suitable for use as control antibody for IL-12B p40 siRNA (h): sc-39640, IL-12B p40 shRNA Plasmid (h): sc-39640-SH and IL-12B p40 shRNA (h) Lentiviral Particles: sc-39640-V.

Molecular Weight of IL-12B p40: 40 kDa.

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-12B p40 (G-6): sc-374651. Western blot analysis of human recombinant IL-12B p40 fusion protein.

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.