SANTA CRUZ BIOTECHNOLOGY, INC.

IL-12B p40 (C-20): sc-1282

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. 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. Chizzonite, R., et al. 1991. IL-12: monoclonal antibodies specific for the 40 kDa subunit block receptor binding and biologic activity on activated human lymphoblasts. J. Immunol. 147: 1548-1556
3. Davis, S., et al. 1993. LIFR β and gp130 as heterodimerizing signal transducers of the tripartite CNTF receptor. Science 260: 1805-1808.
4. Orange, J.S., et al. 1996. An absolute and restricted requirement for IL-12 in natural killer cell IFN-γ production and antiviral defense. Studies of natural killer and T cell responses in contrasting viral infections. J. Immunol. 156: 1138-1142.

CHROMOSOMAL LOCATION

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

SOURCE

IL-12B p40 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of IL-12B p40 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-1282 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

IL-12B p40 (C-20) is recommended for detection of IL-12B p40 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).

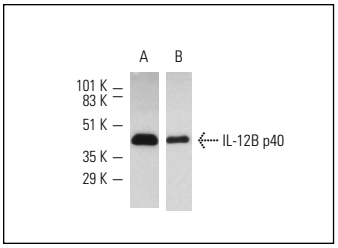
Suitable for use as control antibody for IL-12B p40 siRNA (h): sc-39640, IL-12B p40 shRNA Plasmid (h): sc-39640-SH and IL-12B p40 shRNA (h) Lentiviral Particles: sc-39640-V.

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

RECOMMENDED 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.

DATA



Western blot analysis of human recombinant IL-12 (**A**,**B**). Antibodies tested include IL-12B p40 (M-20): sc-1283 (**A**) and IL-12B p40 (C-20): sc-1282 (**B**).

SELECT PRODUCT CITATIONS

1. Ma, X., et al. 1997. Identification and characterization of a novel Ets-2 related nuclear complex implicated in the activation of the human interleukin-12 p40 gene promotor. J. Biol. Chem. 272: 10389-10395.
2. Faust, J., et al. 2002. Correlation of renal tubular epithelial cell-derived interleukin-18 up-regulation with disease activity in MRL-Faslpr mice with autoimmune lupus nephritis. Arthritis Rheum. 46: 3083-3095.