SANTA CRUZ BIOTECHNOLOGY, INC.

IL-1β (S1H12): sc-52865

SANTA CRUZ®

BIOTECHNOLOGY

The Power to Question

BACKGROUND

Two forms of interleukin-1, designated IL-1α and IL-1β, have been described. Although encoded by distinct genes and exhibiting roughly only 25% sequence identity, IL-1α and IL-1β bind to the same receptor and seem to elicit similar biological responses. IL-1 production is generally thought to be associated with inflammation, but it has also been shown to be expressed during kidney development, thymocyte differentiation and cartilage degradation. IL-1 plays a critical role in the regulation of immune response and inflammation, acting as an activator of T and B lymphocytes and natural killer (NK) cells. In T cells, IL-1 stimulates the production of IL2 and selectively inhibits IL-4 expression. IL-1 induces B cell proliferation and maturation, and immunoglobulin synthesis. NK cells require IL-1β for production of the anti-pathogen IFN-γ. IL-1 has also been implicated in several pathological conditions including rheumatoid arthritis, inflammatory bowel disease and atherosclerosis.

REFERENCES

1. Auron, P.E., et al. 1985. Nucleotide sequence of human monocyte inter-leukin-1 precursor cDNA. Proc. Natl. Acad. Sci. USA 81: 7907-7911.

2. March, C.J., et al. 1985. Cloning, sequence and expression of two distinct human interleukin-1 complementary DNAs. Nature 315: 641-647.

3. Dinarello, C.A. 1991. Interleukin-1 and interleukin-1 antagonism. Blood 77: 1627-1652.

4. Sadouk, M.B., et al. 1995. Human synovial fibroblasts coexpress IL-1 recep-tor type I and type II mRNA. The increased level of the IL-1 receptor in osteoarthritic cells is related to an increased level of the type I receptor. Lab. Invest. 73: 347-355.

5. Lonnemann, G., et al. 1995. Cytokines in human renal interstitial fibrosis. I. Interleukin-1 is a paracrine growth factor for cultured fibrosis-derived kidney fibroblasts. Kidney Int. 47: 837-844.

6. Zúñiga-Pflücker, J.C., et al. 1995. Requirement for TNFα and IL-1α in fetal thymocyte commitment and differentiation. Science 268: 1906-1909.

7. Sandborg, C.I., et al. 1995. IL-4 expression in human T cells is selectively inhibited by IL-1α and IL-1β. J. Immunol. 155: 5206-5212.

CHROMOSOMAL LOCATION

Genetic locus: IL1B (human) mapping to 2q13.

SOURCE

IL-1β (S1H12) is a mouse monoclonal antibody raised against full length IL-1β of human origin.

PRODUCT

Each vial contains 100 µg IgG$_1$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

IL-1β (S1H12) is recommended for detection of IL-1β 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with recombinant human IL-1α, recombinant murine IL-1α or recombinant murine IL-1β.

Suitable for use as control antibody for IL-1β siRNA (h): sc-39615, IL-1β shRNA Plasmid (h): sc-39615-SH and IL-1β shRNA (h) Lentiviral Particles: sc-39615-V.
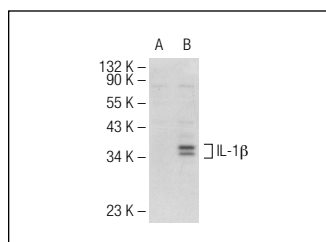
Molecular Weight of IL-1β precursor: 31 kDa.

Molecular Weight of mature IL-1β: 17 kDa.

Positive Controls: IL-1β (h): 293T Lysate: sc-176712, IL-1β (h): 293 Lysate: sc-111184 or BJAB whole cell lysate: sc-2207.
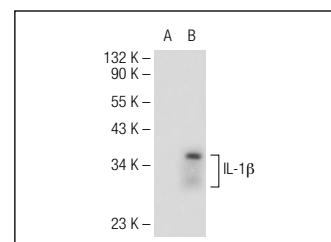
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecip-itation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA

IL-1β (S1H12): sc-52865. Western blot analysis of IL-1β expression in non-transfected: sc-117752 (**A**) and human IL-1β transfected: sc-176712 (**B**) 293T whole cell lysates.

IL-1β (S1H12): sc-52865. Western blot analysis of IL-1β expression in non-transfected: sc-110760 (**A**) and human IL-1β transfected: sc-111184 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Davis, B.K., et al. 2011. Cutting edge: NLRC5-dependent activation of the inflammasome. J. Immunol. 186: 1333-1337.

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.