



IL-1 β (2H12): sc-130323

BACKGROUND

Two forms of interleukin-1, designated IL-1 α and IL-1 β , have been described. Although encoded by distinct genes and exhibiting roughly only 25% sequence identity, IL-1 α and IL-1 β 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 IL-2 and selectively inhibits IL-4 expression. IL-1 induces B cell proliferation and maturation, and immunoglobulin synthesis. NK cells require IL-1 β 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

- Auron, P.E., et al. 1984. Nucleotide sequence of human monocyte interleukin-1 precursor cDNA. *Proc. Natl. Acad. Sci. USA* 81: 7907-7911.
- March, C.J., et al. 1985. Cloning, sequence and expression of two distinct human interleukin-1 complementary DNAs. *Nature* 315: 641-647.
- Dinarello, C.A. 1991. Interleukin-1 and interleukin-1 antagonism. *Blood* 77: 1627-1652.
- Sadouk, M.B., et al. 1995. Human synovial fibroblasts coexpress IL-1 receptor type I and type II mRNA. The increased level of the IL-1 receptor in osteoarthritis cells is related to an increased level of the type I receptor. *Lab. Invest.* 73: 347-355.
- 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.
- Zúñiga-Pflücker, J.C., et al. 1995. Requirement for TNF- α and IL-1 α in fetal thymocyte commitment and differentiation. *Science* 268: 1906-1909.
- Sandborg, C.I., et al. 1995. IL-4 expression in human T cells is selectively inhibited by IL-1 α and IL-1 β . *J. Immunol.* 155: 5206-5212.
- Vergoten, G. and Zanetta, J.P. 2007. Structural differences between the putative carbohydrate-recognition domains of human IL-1 α , IL-1 β and IL-1 receptor antagonist obtained by in silico modeling. *Glycoconj. J.* 24: 183-193.

CHROMOSOMAL LOCATION

Genetic locus: IL1B (human) mapping to 2q14.1.

SOURCE

IL-1 β (2H12) is a mouse monoclonal antibody raised against recombinant IL-1 β of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IL-1 β (2H12) is recommended for detection of IL-1 β of human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

Molecular Weight of IL-1 β precursor: 31 kDa.

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

SELECT PRODUCT CITATIONS

- Impellizzeri, D., et al. 2012. Effect of fasudil, a selective inhibitor of Rho kinase activity, in the secondary injury associated with the experimental model of spinal cord trauma. *J. Pharmacol. Exp. Ther.* 343: 21-33.
- Wang, L., et al. 2016. Pentraxin 3 recruits complement factor H to protect against oxidative stress-induced complement and inflammasome overactivation. *J. Pathol.* 240: 495-506.
- Pan, L., et al. 2017. Shear stress induces human aortic endothelial cell apoptosis via interleukin-1 receptor-associated kinase 2-induced endoplasmic reticulum stress. *Mol. Med. Rep.* 16: 7205-7212.
- Mendes, A.L.G., et al. 2020. Expression of NLRP3 inflammasome in leprosy indicates immune evasion of *Mycobacterium leprae*. *Mem. Inst. Oswaldo Cruz* 115: e190324.
- Baptista, J.S., et al. 2020. Expression of degenerative markers in intervertebral discs of young and elderly asymptomatic individuals. *PLoS ONE* 15: e0228155.
- Kantaputra, P., et al. 2022. Loss of function TGFBR2 variant as a contributing factor in generalized pustular psoriasis and adult-onset immunodeficiency. *Genes* 14: 103.
- Chieosilapatham, P., et al. 2024. Comparative immunohistochemical analysis of inflammatory cytokines in distinct subtypes of Sweet syndrome. *Front. Immunol.* 15: 1355681.

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.



See **IL-1 β (E7-2-hIL β): sc-32294** for IL-1 β antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.