

# IL-1 $\beta$ (F-5): sc-515598

## BACKGROUND

Two forms of interleukin-1, designated IL-1 $\alpha$  and IL-1 $\beta$ , have been described. Although encoded by distinct genes and exhibiting roughly only 25% sequence identity, IL-1 $\alpha$  and IL-1 $\beta$  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 $\beta$  for production of the anti-pathogen IFN- $\gamma$ . 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. 1984. Nucleotide sequence of human monocyte interleukin-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.

## CHROMOSOMAL LOCATION

Genetic locus: IL1B (human) mapping to 2q13; Il1b (mouse) mapping to 2 F1.

## SOURCE

IL-1 $\beta$  (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 238-268 at the C-terminus of IL-1 $\beta$  of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-1 $\beta$  (F-5) is available conjugated to agarose (sc-515598 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515598 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515598 PE), fluorescein (sc-515598 FITC), Alexa Fluor<sup>®</sup> 488 (sc-515598 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515598 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515598 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515598 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515598 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515598 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515598 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

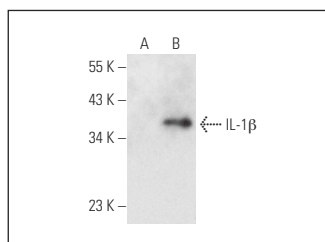
IL-1 $\beta$  (F-5) is recommended for detection of IL-1 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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-1 $\beta$  siRNA (h): sc-39615, IL-1 $\beta$  siRNA (m): sc-39616, IL-1 $\beta$  siRNA (r): sc-45995, IL-1 $\beta$  shRNA Plasmid (h): sc-39615-SH, IL-1 $\beta$  shRNA Plasmid (m): sc-39616-SH, IL-1 $\beta$  shRNA Plasmid (r): sc-45995-SH, IL-1 $\beta$  shRNA (h) Lentiviral Particles: sc-39615-V, IL-1 $\beta$  shRNA (m) Lentiviral Particles: sc-39616-V and IL-1 $\beta$  shRNA (r) Lentiviral Particles: sc-45995-V.

Molecular Weight of mature IL-1 $\beta$ : 17 kDa.

Molecular Weight of IL-1 $\beta$  precursor: 31 kDa.

## DATA



IL-1 $\beta$  (F-5): sc-515598. Western blot analysis of IL-1 $\beta$  expression in non-transfected: sc-117752 (A) and human IL-1 $\beta$  transfected: sc-176712 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. An, Q., et al. 2017. Oleonic acid alleviates diabetic rat carotid artery injury through the inhibition of NLRP3 inflammasome signaling pathways. Mol. Med. Rep. 16: 8413-8419.
2. Coucha, M., et al. 2020. Increased Ephrin-B2 expression in pericytes contributes to retinal vascular death in rodents. Vascul. Pharmacol. 131: 106761.
3. Zhao, H., et al. 2021. Propofol ameliorates endotoxin-induced myocardial cell injury by inhibiting inflammation and apoptosis via the PPAR $\gamma$ /HMGB1/NLRP3 axis. Mol. Med. Rep. 23: 176.
4. Lee, H.L., et al. 2022. Anti-amnesic effect of synbiotic supplementation containing *Corni fructus* and *Limosilactobacillus reuteri* in DSS-induced colitis mice. Int. J. Mol. Sci. 24: 90.
5. Li, L., et al. 2023. IL-37 alleviates alveolar bone resorption and inflammatory response through the NF $\kappa$ B/NLRP3 signaling pathway in male mice with periodontitis. Arch. Oral Biol. 147: 105629.

## RESEARCH USE

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