

IL-1 α (G-10): sc-271618

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

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.
4. 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 osteoarthritic cells is related to an increased level of the type I receptor. *Lab. Invest.* 73: 347-355.

CHROMOSOMAL LOCATION

Genetic locus: IL1A (human) mapping to 2q13.

SOURCE

IL-1 α (G-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 239-269 at the C-terminus of IL-1 α of human origin.

PRODUCT

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

IL-1 α (G-10) is available conjugated to agarose (sc-271618 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271618 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271618 PE), fluorescein (sc-271618 FITC), Alexa Fluor[®] 488 (sc-271618 AF488), Alexa Fluor[®] 546 (sc-271618 AF546), Alexa Fluor[®] 594 (sc-271618 AF594) or Alexa Fluor[®] 647 (sc-271618 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271618 AF680) or Alexa Fluor[®] 790 (sc-271618 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271618 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

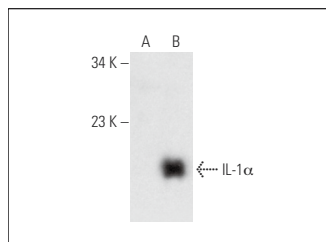
IL-1 α (G-10) is recommended for detection of IL-1 α of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 α siRNA (h): sc-39613, IL-1 α shRNA Plasmid (h): sc-39613-SH and IL-1 α shRNA (h) Lentiviral Particles: sc-39613-V.

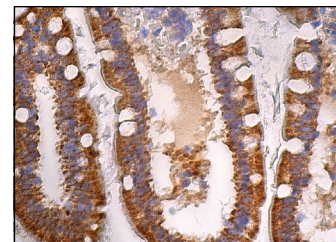
Molecular Weight of IL-1 α : 33/17 kDa.

Positive Controls: IL-1 α (h): 293 Lysate: sc-111172 or HeLa whole cell lysate: sc-2200.

DATA



IL-1 α (G-10): sc-271618. Western blot analysis of IL-1 α expression in non-transfected: sc-110760 (A) and human IL-1 α transfected: sc-111172 (B) 293 whole cell lysates.



IL-1 α (G-10): sc-271618. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Chan, L.P., et al. 2017. IL-8 promotes inflammatory mediators and stimulates activation of p38 MAPK/ERK-NF κ B pathway and reduction of JNK in HNSCC. *Oncotarget* 8: 56375-56388.
2. Saigusa, R., et al. 2018. Systemic sclerosis complicated with localized scleroderma-like lesions induced by Köbner phenomenon. *J. Dermatol. Sci.* 89: 282-289.
3. Maeder, C., et al. 2023. Membrane-bound Interleukin-1 α mediates leukocyte adhesion during atherogenesis. *Front. Immunol.* 14: 1252384.
4. Yamada, A., et al. 2024. Analysis of the effects of importin α 1 on the nuclear translocation of IL-1 α in HeLa cells. *Sci. Rep.* 14: 1322.

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.