SANTA CRUZ BIOTECHNOLOGY, INC.

IL-18 (1.51 E3E1): sc-13602

BACKGROUND

Four structurally related IL-1 receptor ligands have been described. These include three agonists designated IL-1α, IL-1β and IL-1γ/IL-18 and a specific receptor antagonist, IL-1Rα. IL-1α and IL-1β play critical roles in the regulation of the immune response and inflammation, serving as activators of T and B lymphocytes and NK (natural killer) cells. IL-18 (also referred to as IL-1γ) has been shown to augment the secretion of IFN-γ from T lymphocytes and increase NK cell activity in spleen cells. IL-18 exhibits 19% and 12% identity with IL-1α and IL-1β respectively over the twelve β-strands of the β-trefoil fold domain, which is a signature feature of the IL-1 family. The unusual leader sequence of IL-18 may be analogous to the IL-1β pro-domain which must be cleaved by the serine protease ICE for optimal secretion and biological activity. Originally described as IGIF (IFN-γ-inducing factor), IL-18 is induced by mouse liver subsequent to challenge with lipopolysaccharide (LPS).

REFERENCES

1. March, C.J., et al. 1985. Cloning, sequence and expression of two distinct human interleukin-1 complementary DNAs. Nature 315: 641-647.
2. Nakamura, K., et al. 1993. Purification of a factor which provides a costimulatory signal for γ interferon production. Infect. Immun. 61: 64-70.
3. Arend, W.P., et al. 1994. Binding of IL-1α, IL-1β, and IL-1 receptor antagonist by soluble IL-1 receptors and levels of soluble IL-1 receptors in synovial fluids. J. Immunol. 153: 4766-4774.
4. Dinarello, C.A. 1994. The interleukin-1 family: 10 years of discovery. FASEB J. 8: 1314-1325.
5. Okamura, H., et al. 1995. Cloning of a new cytokine that induces IFN-γ production by T cells. Nature 378: 88-91.
6. Bazan, J.F., et al. 1996. A newly defined interleukin-1? Nature 379: 591.
7. Fantuzzi, G., et al. 1996. Effect of endotoxin in IL-1 β-deficient mice. J. Immunol. 157: 291-296.

CHROMOSOMAL LOCATION

Genetic locus: IL18 (human) mapping to 11q23.1; Il18 (mouse) mapping to 9 A5.3.

SOURCE

IL-18 (1.51 E3E1) is a mouse monoclonal antibody raised against IL-18 of human origin.

PRODUCT

Each vial contains 200 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.

RESEARCH USE

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

APPLICATIONS

IL-18 (1.51 E3E1) is recommended for detection of precursor and mature forms of IL-18 of mouse, rat and 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

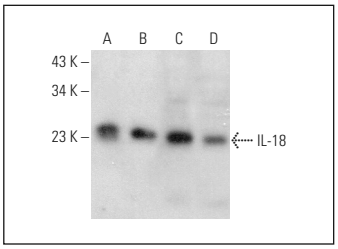
Suitable for use as control antibody for IL-18 siRNA (h): sc-39657, IL-18 siRNA (m): sc-39658, IL-18 shRNA Plasmid (h): sc-39657-SH, IL-18 shRNA Plasmid (m): sc-39658-SH, IL-18 shRNA (h) Lentiviral Particles: sc-39657-V and IL-18 shRNA (m) Lentiviral Particles: sc-39658-V.

Molecular Weight of IL-18 inactive precursor (pro-IL-18): 24 kDa.

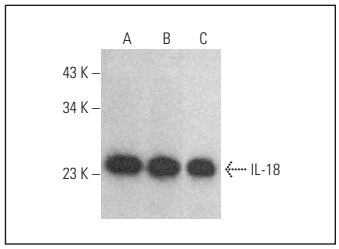
Molecular Weight of mature IL-18: 18 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, A549 cell lysate: sc-2413 or Hela whole cell lysate: sc-2200.

DATA



IL-18 (1.51 E3E1): sc-13602. Western blot analysis of IL-18 expression in A-431 (**A**), CCRF-CEM (**B**), HL-60 (**C**) and TK-1 (**D**) whole cell lysates.



IL-18 (1.51 E3E1): sc-13602. Western blot analysis of IL-18 expression in A-431 (**A**), A549 (**B**) and HeLa (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. León, A.J., et al. 2006. Interleukin 18 maintains a long-standing inflammation in coeliac disease patients. Clin. Exp. Immunol. 146: 479-485.
2. Rovina, N., et al. 2009. Interleukin 18 in induced sputum: association with lung function in chronic obstructive pulmonary disease. Respir. Med. 103: 1056-1062.
3. León, A.J., et al. 2009. High levels of proinflammatory cytokines, but not markers of tissue injury, in unaffected intestinal areas from patients with IBD. Mediators Inflamm. 2009: 580450.
4. Mitoma, H., et al. 2013. The DHX33 RNA helicase senses cytosolic RNA and activates the NLRP3 inflammasome. Immunity 39: 123-135.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.