SANTA CRUZ BIOTECHNOLOGY, INC.

IL-18 (H-173): sc-7954

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 12 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).

CHROMOSOMAL LOCATION

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

SOURCE

IL-18 (H-173) is available as either a rabbit (sc-7954) or chicken (sc-7954-Y) polyclonal antibody raised against amino acids 21-193 of IL-18 of human origin.

PRODUCT

Each vial contains 200 µg IgG (sc-7954) or IgY (sc-7954-Y) in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IL-18 (H-173) is recommended for detection 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)], 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-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 mature IL-18: 18 kDa.

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

Positive Controls: Jurkat whole cell lysate: sc-2204, HL-60 whole cell lysate: sc-2209 or CCRF-CEM cell lysate: sc-2225.

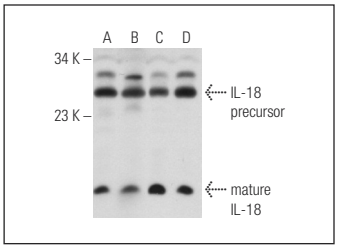
PROTOCOLS

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

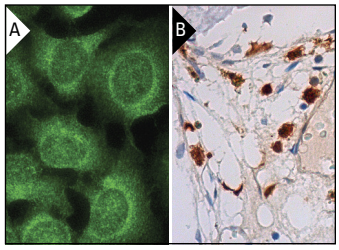
STORAGE

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

DATA



IL-18 (H-173): sc-7954. Western blot analysis of IL-18 expression in HL-60 (**A**), human PBL (**B**), Jurkat (**C**) and CCRF-CEM (**D**) whole cell lysates.



IL-18 (H-173): sc-7954. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic and nuclear staining of subset of hematopoietic cells (**B**).

SELECT PRODUCT CITATIONS

1. El-Mezzein, R.E., et al. 2001. Increased secretion of IL-18 *in vitro* by peripheral blood mononuclear cells of patients with bronchial asthma and atopic dermatitis. Clin. Exp. Immunol. 126: 193-198.
2. AbuElhija, M., et al. 2008. Lipopolysaccharide increased the expression levels of IL-18, ICE and IL-18 R in murine Leydig cells. Am. J. Reprod. Immunol. 60: 151-159.
3. Abu Elhija, M., et al. 2008. LPS increases the expression levels of IL-18, ICE and IL-18 R in mouse testes. Am. J. Reprod. Immunol. 60: 361-371.
4. Ojala, J., et al. 2009. Expression of interleukin-18 is increased in the brains of Alzheimer's disease patients. Neurobiol. Aging 30: 198-209.
5. Tsai, P.Y., et al. 2011. Epigallocatechin-3-gallate prevents lupus nephritis development in mice via enhancing the Nrf2 antioxidant pathway and inhibiting NLRP3 inflammasome activation. Free Radic. Biol. Med. 51: 744-754.
6. Liu, D., et al. 2014. Activation of the NIrp3 inflammasome by mitochondrial reactive oxygen species: a novel mechanism of albumin-induced tubulointerstitial inflammation. Int. J. Biochem. Cell Biol. 57: 7-19.
7. Liu, X., et al. 2015. Remifentanil ameliorates liver ischemia-reperfusion injury through inhibition of interleukin-18 signaling. Transplantation 99: 2109-2117.

RESEARCH USE

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