SANTA CRUZ BIOTECHNOLOGY, INC.

IL-18 (E-8): sc-133127

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 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).

CHROMOSOMAL LOCATION

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

SOURCE

IL-18 (E-8) is a mouse monoclonal antibody raised against amino acids 21-193 of IL-18 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IL-18 (E-8) is available conjugated to agarose (sc-133127 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133127 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-133127 PE), fluorescein (sc-133127 FITC) or Alexa Fluor® 488 (sc-133127 AF488) or Alexa Fluor® 647 (sc-133127 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

IL-18 (E-8) is recommended for detection of IL-18 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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.

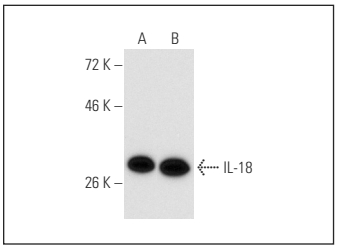
Molecular Weight of IL-18 inactive precursor (pro-IL-18): 24 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Jurkat whole cell lysate: sc-2204 or Caco-2 cell lysate: sc-2262.

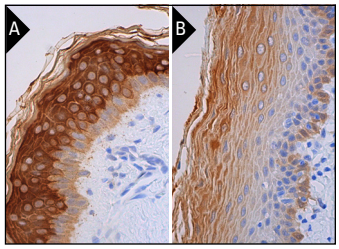
STORAGE

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

DATA



IL-18 (E-8): sc-133127. Western blot analysis of IL-18 expression in NIH/3T3 (**A**) and Jurkat (**B**) whole cell lysates.



IL-18 (E-8): sc-133127. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Chen, K., et al. 2013. ATP-P2X4 signaling mediates NLRP3 inflammasome activation: a novel pathway of diabetic nephropathy. Int. J. Biochem. Cell Biol. 45: 932-943.
2. Zhong, X., et al. 2014. Endothelin-1 induces interleukin-18 expression in human osteoblasts. Arch. Oral Biol. 59: 289-296.
3. Suliman, H.B., et al. 2017. Mitochondrial quality control in alveolar epithelial cells damaged by *S. aureus* pneumonia in mice. Am. J. Physiol. Lung Cell. Mol. Physiol. 313: L699-L709.
4. Ricciardiello, F., et al. 2018. Inhibition of the hexosamine biosynthetic pathway by targeting PGM3 causes breast cancer growth arrest and apoptosis. Cell Death Dis. 9: 377.
5. Wu, D., et al. 2020. Interleukin-18 from neurons and microglia mediates depressive behaviors in mice with post-stroke depression. Brain Behav. Immun. 88: 411-420.
6. Cui, Z.Y., et al. 2021. Parthenolide, bioactive compound of *Chrysanthemum parthenium L.,* ameliorates fibrogenesis and inflammation in hepatic fibrosis via regulating the crosstalk of TLR4 and Stat3 signaling pathway. Phytother. Res. 35: 5680-5693.
7. Dou, J.Y., et al. 2022. Betulin targets Lipin1/2-meidated P2X7 receptor as a therapeutic approach to attenuate lipid accumulation and metaflammation. Biomol. Ther. 30: 246-256.
8. Casili, G., et al. 2022. Dimethyl fumarate (DMF) alleviated post-operative (PO) pain through the N-methyl-D-aspartate (NMDA) receptors. Antioxidants 11: 1774.

RESEARCH USE

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