

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

## BACKGROUND

Four structurally related IL-1 receptor ligands have been described. These include three agonists designated IL-1 $\alpha$ , IL-1 $\beta$  and IL-1 $\gamma$ /IL-18 and a specific receptor antagonist, IL-1R $\alpha$ . IL-1 $\alpha$  and IL-1 $\beta$  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-1 $\gamma$ ) has been shown to augment the secretion of IFN- $\gamma$  from T lymphocytes and increase NK cell activity in spleen cells. IL-18 exhibits 19% and 12% identity with IL-1 $\alpha$  and IL-1 $\beta$  respectively over the twelve  $\beta$ -strands of the  $\beta$ -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-1 $\beta$  pro-domain which must be cleaved by the serine protease ICE for optimal secretion and biological activity. Originally described as IGIF (IFN- $\gamma$ -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  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

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## 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  $\mu$ 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), 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.

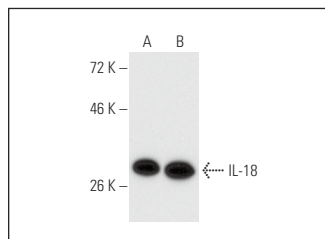
Molecular Weight of IL-18 inactive precursor (pro-IL-18): 24 kDa.

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

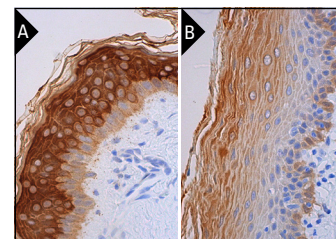
## STORAGE

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

- 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.
- Zhong, X., et al. 2014. Endothelin-1 induces interleukin-18 expression in human osteoblasts. *Arch. Oral Biol.* 59: 289-296.
- 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.
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- Ricciardiello, F., et al. 2021. Suppression of the HBP function increases pancreatic cancer cell sensitivity to a pan-RAS inhibitor. *Cells* 10: 431
- Dou, J.Y., et al. 2022. Betulin targets lipin1/2-mediated P2X7 receptor as a therapeutic approach to attenuate lipid accumulation and metaflammation. *Biomol. Ther.* 30: 246-256.
- Casili, G., et al. 2022. Dimethyl fumarate (DMF) alleviated post-operative (PO) pain through the N-methyl-D-aspartate (NMDA) receptors. *Antioxidants* 11: 1774.
- Zerbato, B., et al. 2023. PGM3 inhibition shows cooperative effects with erastin inducing pancreatic cancer cell death via activation of the unfolded protein response. *Front. Oncol.* 13: 1125855.

## RESEARCH USE

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