

caspase-1 (14F468): sc-56036

BACKGROUND

Caspase-1, originally designated ICE (for IL-1 converting enzyme), is a member of the group of caspases with large prodomains. Caspase-1 promotes maturation of interleukin IL-1 β and interleukin18 (IL-18) by proteolytic cleavage of precursor forms into biologically active pro-inflammatory cytokines. Active caspase-1, a (p20/p10) 2 tetramer, is necessary and sufficient for cleavage of precursor IL-1 as well as for induction of apoptosis in some cell lines. The highly conserved family of caspases mediate many of the morphological and biochemical features of apoptosis, including structural dismantling of cell bodies and nuclei, fragmentation of genomic DNA, destruction of regulatory proteins and propagation of other pro-apoptotic molecules. The human caspase-1 gene maps to chromosome 11q22.3 and encodes a cytoplasmic protein expressed in liver, heart, skeletal muscle kidney and testis. caspase-1 is implicated in inflammation, septic shock, and other situations such as wound healing and the growth of certain leukemias.

CHROMOSOMAL LOCATION

Genetic locus: CASP1 (human) mapping to 11q22.3; Casp1 (mouse) mapping to 9 A1.

SOURCE

caspase-1 (14F468) is a mouse monoclonal antibody raised against amino acids 371-390 of caspase-1 of human origin.

PRODUCT

Each vial contains 50 μ g IgG $_1$ kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide.

APPLICATIONS

caspase-1 (14F468) is recommended for detection of full-length caspase-1 and cleaved caspase-1 forms that retain amino acids 371-390 of the caspase-1 protein of mouse, rat, human and porcine origin by Western Blotting (starting dilution 1:200, 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for caspase-1 siRNA (h): sc-29235, caspase-1 siRNA (m): sc-29922, caspase-1 siRNA (r): sc-61878, caspase-1 shRNA Plasmid (h): sc-29235-SH, caspase-1 shRNA Plasmid (m): sc-29922-SH, caspase-1 shRNA Plasmid (r): sc-61878-SH, caspase-1 shRNA (h) Lentiviral Particles: sc-29235-V, caspase-1 shRNA (m) Lentiviral Particles: sc-29922-V and caspase-1 shRNA (r) Lentiviral Particles: sc-61878-V.

Molecular Weight of caspase-1: 45 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HL-60 + LPS cell lysate: sc-24704 or THP-1 cell lysate: sc-2238.

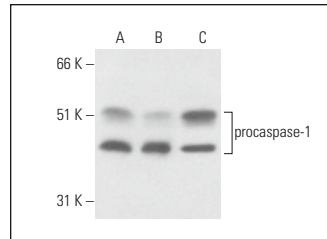
STORAGE

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

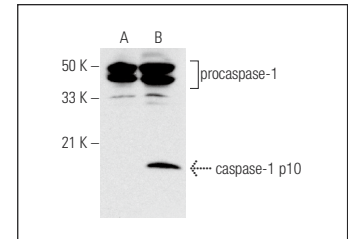
RESEARCH USE

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

DATA



caspase-1 (14F468): sc-56036. Western blot analysis of procaspase-1 expression in HL-60 (A), LPS-treated HL-60 (B) and THP-1 (C) whole cell lysates.



caspase-1 (14F468): sc-56036. Western blot analysis of caspase-1 in untreated (A) and PMA (sc-3576) and LPS (sc-3535) treated (B) THP-1 whole cell lysates. Note cleavage of caspase-1 in lane B.

SELECT PRODUCT CITATIONS

- Atay, S., et al. 2011. Human trophoblast-derived exosomal fibronectin induces pro-inflammatory IL-1 β production by macrophages. *Am. J. Reprod. Immunol.* 66: 259-269.
- Shipkowski, K.A., et al. 2015. An allergic lung microenvironment suppresses carbon nanotube-induced inflammasome activation via STAT6-dependent inhibition of caspase-1. *PLoS ONE* 10: e0128888.
- Ahmad, F., et al. 2016. Phosphodiesterase 3B (PDE3B) regulates NLRP3 inflammasome in adipose tissue. *Sci Rep.* 6: 28056.
- Li, Z., et al. 2017. Upregulation of NLRP3 inflammasome components in Mooren's ulcer. *Graefes Arch. Clin. Exp. Ophthalmol.* 255: 607-612.
- Tyagi, A., et al. 2018. SIRT3 deficiency-induced mitochondrial dysfunction and inflammasome formation in the brain. *Sci. Rep.* 8: 17547.
- Huang, J.J., et al. 2019. HIF-1 α promotes NLRP3 inflammasome activation in bleomycin-induced acute lung injury. *Mol. Med. Rep.* 20: 3424-3432.
- Nakata, R., et al. 2020. Slco2a1 deficiency exacerbates experimental colitis via inflammasome activation in macrophages: a possible mechanism of chronic enteropathy associated with SLC02A1 gene. *Sci. Rep.* 10: 4883.
- Guan, Y., et al. 2021. A single genetic locus controls both expression of DPEP1/CHMP1A and kidney disease development via ferroptosis. *Nat. Commun.* 12: 5078.
- The, E., et al. 2022. Interleukin 38 alleviates aortic valve calcification by inhibition of NLRP3. *Proc. Natl. Acad. Sci. USA* 119: e2202577119.
- Cao, Y., et al. 2023. Inhibition of neutrophil extracellular trap formation attenuates NLRP1-dependent neuronal pyroptosis via STING/IRE1 α pathway after traumatic brain injury in mice. *Front. Immunol.* 14: 1125759.



See **caspase-1 (D-3): sc-392736** for caspase-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.