SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-1 (14F468): sc-56036

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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-inflamatory 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 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 µg per 100-500 µg 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.

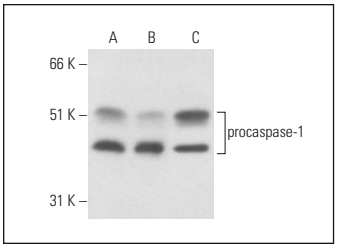
STORAGE

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

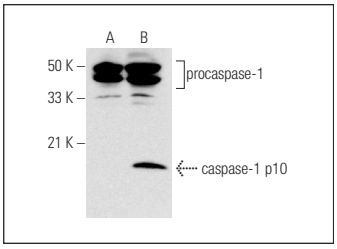
RESEARCH USE

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

1. 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.
2. Zhang, X., et al. 2012. Enterohemorrhagic *Escherichia coli* specific enterohemolysin induced IL-1β in human macrophages and EHEC-induced IL-1β required activation of NLRP3 inflammasome. PLoS ONE 7: e50288.
3. 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.
4. Dirks-Naylor, A.J., et al. 2014. Effects of acute doxorubicin treatment on hepatic proteome lysine acetylation status and the apoptotic environment. World J. Biol. Chem. 5: 377-386.
5. 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.
6. Haque, S., et al. 2016. HIV promotes NLRP3 inflammasome complex activation in murine HIV-associated nephropathy. Am. J. Pathol. 186: 347-358.
7. Li, Z., et al. 2017. Upregulation of NLRP3 inflammasome components in Mooren's ulcer. Graefes Arch. Clin. Exp. Ophthalmol. 255: 607-612.
8. Tyagi, A., et al. 2018. SIRT3 deficiency-induced mitochondrial dysfunction and inflammasome formation in the brain. Sci. Rep. 8: 17547.
9. Raghawan, A.K., et al. 2019. HSC70 regulates cold-induced caspase-1 hyperactivation by an autoinflammation-causing mutant of cytoplasmic immune receptor NLRC4. Proc. Natl. Acad. Sci. USA 116: 21694-21703.

CONJUGATES

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.