SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-1 p20 (D-4): sc-398715

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-1β and interleukin18 (IL-18) by proteolytic cleavage of precursor forms into biologically active pro-inflamatory cytokines. The prodomain of caspase-1 (also known as Pro-C1) represents the amino acid terminal portion of the caspase-1 precursor. Pro-C1 is produced as a residual component after proteolytic cleavage of the precursor generates the functional caspase-1 subunits known as the p20 and p10 subunits. 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 2q14 and encodes a cytoplasmic protein expressed in liver, heart, skeletal muscle kidney and testis. Caspase-1 has been implicated in inflammation, septic shock, and other situations such as wound healing and the growth of certain leukemias.

CHROMOSOMAL LOCATION

Genetic locus: Casp1 (mouse) mapping to 9 A1.

SOURCE

caspase-1 p20 (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 259-294 at the C-terminus of caspase-1 p20 of mouse origin.

PRODUCT

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

caspase-1 p20 (D-4) is available conjugated to agarose (sc-398715 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398715 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398715 PE), fluorescein (sc-398715 FITC), Alexa Fluor® 488 (sc-398715 AF488), Alexa Fluor® 546 (sc-398715 AF546), Alexa Fluor® 594 (sc-398715 AF594) or Alexa Fluor® 647 (sc-398715 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398715 AF680) or Alexa Fluor® 790 (sc-398715 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398715 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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.

APPLICATIONS

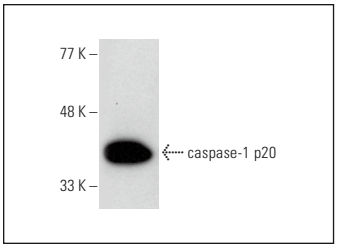
caspase-1 p20 (D-4) is recommended for detection of caspase-1 precursor and p20 subunit of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting 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 caspase-1 siRNA (m): sc-29922, caspase-1 siRNA (r): sc-61878, caspase-1 shRNA Plasmid (m): sc-29922-SH, caspase-1 shRNA Plasmid (r): sc-61878-SH, caspase-1 shRNA (m) Lentiviral Particles: sc-29922-V and caspase-1 shRNA (r) Lentiviral Particles: sc-61878-V.

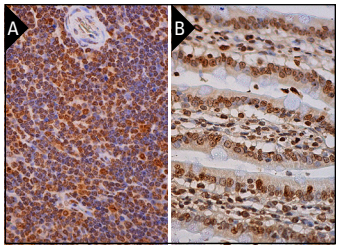
Molecular Weight of caspase-1 p20: 45/20 kDa.

Positive Controls: RAW 309 Cr.1 cell lysate: sc-3814.

DATA



caspase-1 p20 (D-4) HRP: sc-398715 HRP. Direct western blot analysis of caspase-1 p20 expression in RAW 309 Cr.1 whole cell lysate.



caspase-1 p20 (D-4): sc-398715. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat spleen tissue showing nuclear and cytoplasmic staining of cells in white pulp and cells in red pulp (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat small intestine tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Dolunay, A., et al. 2017. Inhibition of NLRP3 inflammasome prevents LPS-induced inflammatory hyperalgesia in mice: contribution of NFκB, caspase-1/11, ASC, NOX, and NOS isoforms. Inflammation 40: 366-386.
2. Lin, L., et al. 2018. Cocaine- and amphetamine-regulated transcript (CART) is associated with dopamine and is protective against ischemic stroke. Mol. Med. Rep. 18: 3298-3304.
3. Nyakundi, B.B., et al. 2019. Oxidized hemoglobin forms contribute to NLRP3 inflammasome-driven IL-1β production upon intravascular hemolysis. Biochim. Biophys. Acta Mol. Basis Dis. 1865: 464-475.
4. Chei, S., et al. 2020. Spirulina maxima extract prevents activation of the NLRP3 inflammasome by inhibiting ERK signaling. Sci. Rep. 10: 2075.
5. Yuan, B., et al. 2020. Inhibition of AIM2 inflammasome activation alleviates GSDMD-induced pyroptosis in early brain injury after subarachnoid haemorrhage. Cell Death Dis. 11: 76.

PROTOCOLS

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