SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-11 (17D9): sc-56038

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Caspase-11 plays a crucial role in OLG death and pathogenesis in experimental autoimmune encephalomyelitis (EAE). Caspase-11 also leads to the synthesis of the functional form of the cytokine interleukin-1β. Caspases are a family of mammalian proteases related to the CED-3 gene of *Caenorhabditis elegans*. These CED-3 orthologs 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. Based on their substrate specificities and DNA sequence homologies, the 14 currently identified caspases may be divided into three groups: apoptotic initiators, apoptotic executioners and inflammatory mediators. Upon activation, caspases appear to play an important role in sequelae of traumatic brain injury, spinal cord injury and cerebral ischemia. In addition, they may also play a role in mediating cell death in chronic neurodegenerative conditions such as Alzheimer's disease, Huntington's disease and amyotrophic lateral sclerosis.

REFERENCES

1. Eldadah, B.A. and Faden, A.I. 2000. Caspase pathways, neuonal apoptosis, and CNS injury. J. Neurotrauma 17: 811-829.
2. Chang, H.Y. and Yang, X. 2000. Proteases for cell suicide: functions and regulation of caspases. Microbiol. Mol. Biol. Rev. 64: 821-846.
3. Fadeel, B., et al. 2000. The most unkindest cut of all: on the multiple roles of mammalian caspases. Leukemia 14: 1514-1525.
4. Johnson, D.E. 2000. Noncaspase proteases in apoptosis. Leukemia 14: 1695-1703.
5. Grutter, M.G. 2000. Caspases: key players in programmed cell death. Curr. Opin. Struct. Biol. 10: 649-655.
6. Hisahara, S., et al. 2001. caspase-11 mediates ogliodendrocyte cell death and pathogenesis of autoimmune-mediated demyelination. J. Exp. Med. 193: 111-122.
7. Harrison, D.C., et al. 2001. Caspase mRNA expression in a rat model of focal cerebral ischemia. Brain Res. Mol. Brain Res. 89: 133-146.
8. Coffey, R.N., et al. 2001. Signaling for the caspases: their role in prostate cell apoptosis. J. Urol. 165: 5-14.

CHROMOSOMAL LOCATION

Genetic locus: Casp4 (mouse) mapping to 9 A1.

SOURCE

caspase-11 (17D9) is a rat monoclonal antibody raised against recombinant caspase-11 of mouse origin.

PRODUCT

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

APPLICATIONS

caspase-11 (17D9) is recommended for detection of caspase-11 of mouse and rat 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for caspase-11 siRNA (m): sc-37363, caspase-11 shRNA Plasmid (m): sc-37363-SH and caspase-11 shRNA (m) Lentiviral Particles: sc-37363-V.

Molecular Weight of precursor caspase-11: 48 kDa.

Molecular Weight of caspase-11 p20/p10 subunits: 20/10 kDa.

SELECT PRODUCT CITATIONS

1. Tsugita, M., et al. 2017. SR-B1 is a silica receptor that mediates canonical inflammasome activation. Cell Rep. 18: 1298-1311.
2. Wang, L., et al. 2019. Combined ischemic postconditioning and ozone postconditioning provides synergistic protection against renal ischemia and reperfusion injury through inhibiting pyroptosis. Urology 123: 296.e1-296.e8.
3. Zhang, J., et al. 2020. Inhibition of the SIRT1 signaling pathway exacerbates endoplasmic reticulum stress induced by renal ischemia/reperfusion injury in type 1 diabetic rats. Mol. Med. Rep. 21: 695-704.
4. Digby, Z., et al. 2021. Evolutionary loss of inflammasomes in the Carnivora and implications for the carriage of zoonotic infections. Cell Rep. 36: 109614.
5. Lyu, Z., et al. 2021. Destructive effects of pyroptosis on homeostasis of neuron survival associated with the dysfunctional BBB-glymphatic system and Amyloid-β accumulation after cerebral ischemia/reperfusion in rats. Neural Plast. 2021: 4504363.
6. Zhao, Y.Y., et al. 2021. Samotolisib attenuates acute liver injury through inhibiting caspase-11-mediated pyroptosis via regulating E3 ubiquitin ligase Nedd4. Front. Pharmacol. 12: 726198.
7. Zhang, B., et al. 2022. Naringenin alleviates renal ischemia reperfusion injury by suppressing ER stress-induced pyroptosis and apoptosis through activating Nrf2/HO-1 signaling pathway. Oxid. Med. Cell. Longev. 2022: 5992436.
8. Chen, X., et al. 2022. Trimetazidine affects pyroptosis by targeting GSDMD in myocardial ischemia/reperfusion injury. Inflamm. Res. 71: 227-241.

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.