

caspase-4 (4B9): sc-56056

BACKGROUND

A unique family of cysteine proteases has been described that differs in sequence, structure and substrate specificity from any previously described protease family. This family, termed CED-3/caspase-1, is comprised of caspase-1, caspase-2, caspase-3, caspase-4, caspase-6 and caspase-7 (also designated Mch3, ICE-LAP3 or CMH-1) (1), caspase-9 and caspase-10. Ced-3/ caspase-1 family members function as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. Poly(ADP-ribose) polymerase plays an integral role in surveying for DNA mutations and double strand breaks. Caspase-3, caspase-7 and caspase-9, but not caspase-1, have been shown to cleave the nuclear protein PARP into an apoptotic fragment. Caspase-6, but not caspase-3, has been shown to cleave the nuclear lamins which are critical to maintaining the integrity of the nuclear envelope and cellular morphology. Caspase-10 has been shown to activate caspase-3 and caspase-7 in response to apoptotic stimuli.

REFERENCES

- Lindahl, T., et al. 1995. Post-translational modification of poly (ADP-ribose) polymerase induced by DNA strand breaks. *Trends Biochem. Sci.* 20: 405-411.
- Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homologue of the *Caenorhabditis elegans* cell death protein CED-3 is activated during Fas- and tumor necrosis factor-induced apoptosis. *J. Biol. Chem.* 271: 1621-1625.

CHROMOSOMAL LOCATION

Genetic locus: CASP4 (human) mapping to 11q22.3.

SOURCE

caspase-4 (4B9) is a mouse monoclonal antibody raised against amino acids 1-270 of caspase-4 of human origin.

This product has been manufactured by MBL International Corporation.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 5% glycerol.

APPLICATIONS

caspase-4 (4B9) is recommended for detection of caspase-4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; may cross-react with Myc-tagged caspase-4 protein expressed in 293T cells.

Suitable for use as control antibody for caspase-4 siRNA (h): sc-72798, caspase-4 shRNA Plasmid (h): sc-72798-SH and caspase-4 shRNA (h) Lentiviral Particles: sc-72798-V.

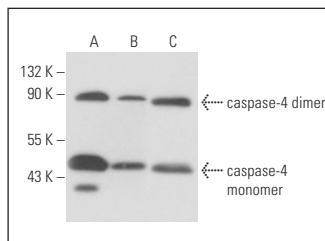
Molecular Weight of caspase-4: 50 kDa.

Positive Controls: HeLa + UV irradiated cell lysate: sc-2221, HeLa whole cell lysate: sc-2200 or ECV304 cell lysate: sc-2269.

STORAGE

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

DATA



caspase-4 (4B9): sc-56056. Western blot analysis of caspase-4 expression in ECV304 (A), HeLa (B) and UV-treated HeLa (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Banos-Lara, M., et al. 2010. Role of individual caspases induced by astrovirus on the processing of its structural protein and its release from the cell through a non-lytic mechanism. *Virology* 401: 322-332.
- Takemoto, K., et al. 2011. Mitochondrial TRAP1 regulates the unfolded protein response in the endoplasmic reticulum. *Neurochem. Int.* 58: 880-887.
- Tufo, G., et al. 2014. The protein disulfide isomerases PDIA4 and PDIA6 mediate resistance to cisplatin-induced cell death in lung adenocarcinoma. *Cell Death Differ.* 21: 685-695.
- Nagamatsu, K., et al. 2015. Dysregulation of *Escherichia coli* α -hemolysin expression alters the course of acute and persistent urinary tract infection. *Proc. Natl. Acad. Sci. USA* 112: E871-E880.
- Song, Q., et al. 2016. FAM3A attenuates ER stress-induced mitochondrial dysfunction and apoptosis via CHOP-Wnt pathway. *Neurochem. Int.* 94: 82-89.
- Xie, Q., et al. 2016. ABT737 reverses cisplatin resistance by regulating ER-mitochondria Ca²⁺ signal transduction in human ovarian cancer cells. *Int. J. Oncol.* 49: 2507-2519.
- Pallett, M.A., et al. 2017. Bacterial virulence factor inhibits caspase-4/11 activation in intestinal epithelial cells. *Mucosal Immunol.* 10: 602-612.
- Xu, L., et al. 2017. Bcl-2 overexpression reduces cisplatin cytotoxicity by decreasing ER-mitochondrial Ca²⁺ signaling in SKOV3 cells. *Oncol. Rep.* 39: 985-992.
- Cheng, K.T., et al. 2017. Caspase-11-mediated endothelial pyroptosis underlies endotoxemia-induced lung injury. *J. Clin. Invest.* 127: 4124-4135.
- Xie, Q., et al. 2018. TAT-fused IP3R-derived peptide enhances cisplatin sensitivity of ovarian cancer cells by increasing ER Ca²⁺ release. *Int. J. Mol. Med.* 41: 809-817.

RESEARCH USE

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