

# caspase-9 (4i31): sc-70507

## 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, Ced-3/caspase-1, is comprised of caspase-1, caspase-2, caspase-3, caspase-4, caspase-6, caspase-7 (also designated Mch3, ICE-LAP3 or CMH-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

1. Lindahl, T., et al. 1995. Posttranslational modification of poly(ADP-ribose) polymerase induced by DNA strand breaks. *Trends Biochem. Sci.* 20: 405-411.
2. Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homolog 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: CASP9 (human) mapping to 1p36.21.

## SOURCE

caspase-9 (4i31) is a mouse monoclonal antibody raised against full length caspase-9 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

caspase-9 (4i31) is recommended for detection of caspase-9 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)].

Suitable for use as control antibody for caspase-9 siRNA (h): sc-29931, caspase-9 shRNA Plasmid (h): sc-29931-SH and caspase-9 shRNA (h) Lentiviral Particles: sc-29931-V.

Molecular Weight of procaspase-9: 46 kDa.

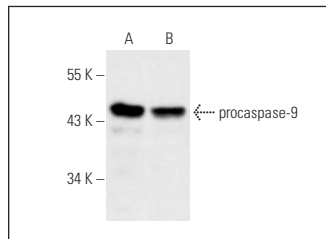
Molecular Weight of caspase-9 activated form: 35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MOLT-4 cell lysate: sc-2233.

## STORAGE

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

## DATA



caspase-9 (4i31): sc-70507. Western blot analysis of procaspase-9 expression in HeLa (A) and MOLT-4 (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Chen, T., et al. 2009. Dihydroartemisinin induces apoptosis and sensitizes human ovarian cancer cells to carboplatin therapy. *J. Cell. Mol. Med.* 13: 1358-1370.
2. Wang, O., et al. 2011. Anticancer activity of 2 $\alpha$ , 3 $\alpha$ , 19 $\beta$ , 2 $\beta$ -tetrahydroxyurs-12-en-28-oic acid (THA), a novel triterpenoid isolated from *Sinojackia sarcocarpa*. *PLoS ONE* 6: e21130.
3. Zhang, M., et al. 2012. Ani-survivin DNazymes inhibit cell proliferation and migration in breast cancer cell line MCF7. *Asian Pac. J. Cancer Prev.* 13: 6233-6237.
4. Ma, Y., et al. 2012. A mitochondria-mediated apoptotic pathway induced by deoxynivalenol in human colon cancer cells. *Toxicol. In Vitro* 26: 414-420.
5. Zhang, M., et al. 2013. Anti-Insulin-like growth factor-IIP3 DNazymes inhibit cell proliferation and induce caspase-dependent apoptosis in human hepatocarcinoma cell lines. *Drug Des. Devel. Ther.* 7: 1089-1102.
6. Molagoda, I.M.N., et al. 2021. Fisetin protects HaCaT human keratinocytes from fine particulate matter (PM<sub>2.5</sub>)-induced oxidative stress and apoptosis by inhibiting the endoplasmic reticulum stress response. *Antioxidants* 10: 1492.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **caspase-9 (96.1.23): sc-56076** for caspase-9 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.