

caspase-3 (H-277): sc-7148

BACKGROUND

Caspase-3, also known as apopain, SCA-1, Yama and CPP32, is an aspartate-specific cysteine protease that belongs to the ICE subfamily of caspases. Caspase-3 is expressed in cells as an inactive precursor from which the p17 and p11 subunits of the mature caspase-3 are proteolytically generated during apoptosis. The caspase-3 precursor is first cleaved at Asp 175-Ser 176 to produce the p11 subunit and the p20 peptide. Subsequently, the p20 peptide is cleaved at Asp 28-Ser 29 to generate the mature p17 subunit. The active caspase-3 enzyme is a heterodimer composed of two p17 and two p11 subunits. At the onset of apoptosis, caspase-3 proteolytically cleaves PARP at a Asp 216-Gly 217 bond. During the execution of the apoptotic cascade, activated caspase-3 releases SREBP from the membrane of the ER in a proteolytic reaction that is distinct from their normal sterol-dependent activation. Caspase-3 cleaves and activates SREBPs between the basic helix-loop-helix leucine zipper domain and the membrane attachment domain. Caspase-3 also cleaves and activates caspase-6, -7 and -9. The human caspase-3 gene encodes a cytoplasmic protein that is highly expressed in lung, spleen, heart, liver, kidney and cells of the immune system.

CHROMOSOMAL LOCATION

Genetic locus: CASP3 (human) mapping to 4q35.1; Casp3 (mouse) mapping to 8 B1.1.

SOURCE

caspase-3 (H-277) is a rabbit polyclonal antibody raised against amino acids 1-277 representing full length procaspase-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-7148 AC, 500 µg/ 0.25 ml agarose in 1 ml.

APPLICATIONS

caspase-3 (H-277) is recommended for detection of caspase-3 p11, p17 and p20 subunits and full length procaspase-3 of mouse, rat and human 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); partially cross-reactive with other caspases. caspase-3 (H-277) is also recommended for detection of caspase-3 p11, p17 and p20 subunits and full length procaspase-3 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for caspase-3 siRNA (h): sc-29237, caspase-3 siRNA (m): sc-29927, caspase-3 shRNA Plasmid (h): sc-29237-SH, caspase-3 shRNA Plasmid (m): sc-29927-SH, caspase-3 shRNA (h) Lentiviral Particles: sc-29237-V and caspase-3 shRNA (m) Lentiviral Particles: sc-29927-V.

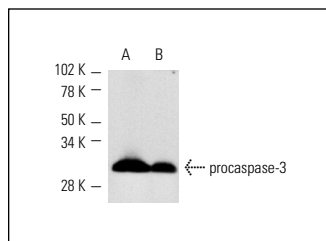
Molecular Weight of procaspase-3: 32 kDa.

Molecular Weight of caspase-3 subunits: 11/17/20 kDa.

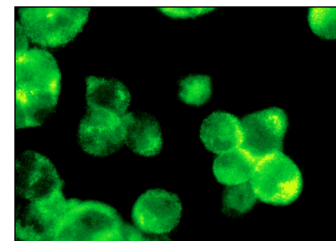
STORAGE

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

DATA



caspase-3 (H-277): sc-7148. Western blot analysis of caspase-3 precursor expression in HuT 78 (A) and CCRF-HSB-2 (B) whole cell lysates.



caspase-3 (H-277): sc-7148. Immunofluorescence staining of methanol-fixed Hut 78 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Mukhopadhyay, A., et al. 2001. Curcumin downregulates cell survival mechanisms in human prostate cancer cell lines. *Oncogene* 20: 7597-7609.
- Vázquez, R., et al. 2012. Toddaculin, a natural coumarin from *Toddalia asiatica*, induces differentiation and apoptosis in U-937 leukemic cells. *Phytomedicine* 19: 737-746.
- Du, H., et al. 2012. Cigarette smoke-induced failure of apoptosis resulting in enhanced neoplastic transformation in human bronchial epithelial cells. *J. Toxicol. Environ. Health A* 75: 707-720.
- Cai, C., et al. 2012. SIV_{mac239}-Nef down-regulates cell surface expression of CXCR4 in tumor cells and inhibits proliferation, migration and angiogenesis. *Anticancer Res.* 7: 2759-2768.
- Jean, J.C., et al. 2013. Transcription factor Klf4, induced in the lung by oxygen at birth, regulates perinatal fibroblast and myofibroblast differentiation. *PLoS ONE* 8: e54806.
- da Silva, S.V., et al. 2013. Increased leptin response and inhibition of apoptosis in thymocytes of young rats offspring from protein deprived dams during lactation. *PLoS ONE* 8: e64220.
- Morales-Cano, D., et al. 2013. Apoptosis induced by paclitaxel via Bcl-2, Bax and caspases 3 and 9 activation in NB4 human leukaemia cells is not modulated by ERK inhibition. *Exp. Toxicol. Pathol.* 65: 1101-1108.

RESEARCH USE

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



Try **caspase-3 (E-8): sc-7272** or **caspase-3 (46): sc-136219**, our highly recommended monoclonal alternatives to caspase-3 (H-277). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **caspase-3 (E-8): sc-7272**.