

# caspase-3 (31A1067): sc-56053

## 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 (31A1067) is a mouse monoclonal antibody raised against full length caspase-3 of human origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

caspase-3 (31A1067) is recommended for detection of caspase-3 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), 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-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.

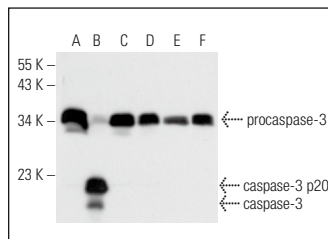
Molecular Weight of caspase-3 subunits: 11/17/20 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, HeLa whole cell lysate: sc-2200 or U-698-M whole cell lysate: sc-364799.

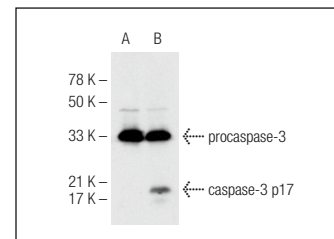
## STORAGE

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

## DATA



caspase-3 (31A1067): sc-56053. Western blot analysis of caspase-3 expression in CCRF-CEM (A), HuT 78 (B), CCRF-HSB-2 (C), PC-3 (D), HeLa (E) and U-698-M (F) whole cell lysates.



caspase-3 (31A1067): sc-56053. Western blot analysis of caspase-3 expression in untreated (A) and Staurosporine (sc-3510) treated (B) HeLa whole cell lysates. Note cleaved caspase-3 expression in lane B.

## SELECT PRODUCT CITATIONS

- Yosifov, D.Y., et al. 2009. Erucylphospho-N,N,N-trimethylpropylammonium shows substantial cytotoxicity in multiple myeloma cells. *Ann. N.Y. Acad. Sci.* 1171: 350-358.
- Yang, X., et al. 2011. Cyclophosphamide-induced apoptosis in A431 cells is inhibited by fucosyltransferase IV. *J. Cell. Biochem.* 112: 1376-1383.
- Yaffe, E., et al. 2014. Oncogenic properties of a spermatogenic meiotic variant of fer kinase expressed in somatic cells. *Cancer Res.* 74: 6474-6485.
- Heine, A., et al. 2015. The VEGF-receptor inhibitor axitinib impairs dendritic cell phenotype and function. *PLoS ONE* 10: e0128897.
- Li, B., et al. 2016. 20(S)-protopanaxadiol saponins inhibit SKOV3 cell migration. *Oncol. Lett.* 11: 1693-1698.
- Avci, H., et al. 2017. Protective effects of silymarin and curcumin on cyclophosphamide-induced cardiotoxicity. *Exp. Toxicol. Pathol.* 69: 317-327.
- Ma, Y., et al. 2018. Anticancer effect of exogenous hydrogen sulfide in cisplatin-resistant A549/DDP cells. *Oncol. Rep.* 39: 2969-2977.
- Zhang, L., et al. 2019. Liraglutide, a glucagon-like peptide-1 analog, inhibits high glucose-induced oxidative stress and apoptosis in neonatal rat cardiomyocytes. *Exp. Ther. Med.* 17: 3734-3740.
- Masuda, A., et al. 2020. Efficient recruitment of c-FLIP<sub>L</sub> to the death-inducing signaling complex leads to Fas resistance in natural killer-cell lymphoma. *Cancer Sci.* 111: 807-816.

## RESEARCH USE

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



See **caspase-3 (E-8): sc-7272** for caspase-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.