

# caspase-3 (CPP324-1-18): sc-56052

## 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.

## REFERENCES

- Nicholson, D., et al. 1995. Identification and inhibition of the ICE/CED-3 protease necessary for mammalian apoptosis. *Nature* 37: 37-43.
- Cohen, G.M. 1997. Caspases: the executioners of apoptosis. *Biochem. J.* 326: 1-16.

## CHROMOSOMAL LOCATION

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

## SOURCE

caspase-3 (CPP324-1-18) is a mouse monoclonal antibody raised against full length caspase-3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

caspase-3 (CPP324-1-18) is available conjugated to agarose (sc-56052 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-56052 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-56052 PE), fluorescein (sc-56052 FITC), Alexa Fluor® 488 (sc-56052 AF488), Alexa Fluor® 546 (sc-56052 AF546), Alexa Fluor® 594 (sc-56052 AF594) or Alexa Fluor® 647 (sc-56052 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-56052 AF680) or Alexa Fluor® 790 (sc-56052 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## APPLICATIONS

caspase-3 (CPP324-1-18) is recommended for detection of caspase-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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

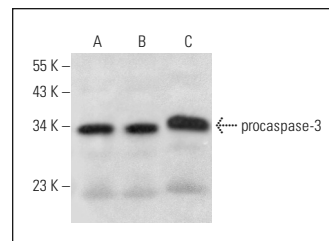
Suitable for use as control antibody for caspase-3 siRNA (h): sc-29237, caspase-3 siRNA (m): sc-29927, caspase-3 shRNA Plasmid (h): sc-29237-SH, caspase-3 shRNA Plasmid (m): sc-29927-SH, caspase-3 shRNA (h) Lentiviral Particles: sc-29237-V and caspase-3 shRNA (m) Lentiviral Particles: sc-29927-V.

Molecular Weight of procaspase-3: 32 kDa.

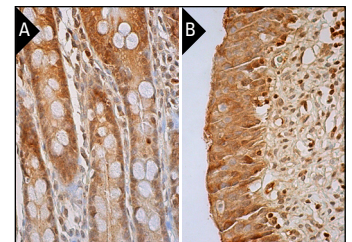
Molecular Weight of caspase-3 subunits: 11/17/20 kDa.

Positive Controls: Ramos cell lysate: sc-2216, MOLT-4 cell lysate: sc-2233 or BJAB whole cell lysate: sc-2207.

## DATA



caspase-3 (CPP324-1-18): sc-56052. Western blot analysis of procaspase-3 expression in BJAB (A), Ramos (B) and MOLT-4 (C) whole cell lysates.



caspase-3 (CPP324-1-18): sc-56052. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and nuclear staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic and nuclear staining of urothelial cells (B).

## SELECT PRODUCT CITATIONS

- Liu, W., et al. 2009. MAC related mitochondrial pathway in oroxylin A induces apoptosis in human hepatocellular carcinoma Hep G2 cells. *Cancer Lett.* 284: 198-207.
- Zeng, G., et al. 2018. Morroniside protects against cerebral ischemia/reperfusion injury by inhibiting neuron apoptosis and MMP2/9 expression. *Exp. Ther. Med.* 16: 2229-2234.
- Zhang, C., et al. 2019. Induction of apoptosis and erythroid differentiation of human chronic myelogenous leukemia K562 cells by low concentrations of lidamycin. *Oncol. Rep.* 41: 475-482.
- Jagadish, N., et al. 2020. Knockdown of A-kinase anchor protein 4 inhibits proliferation of triple-negative breast cancer cells *in vitro* and *in vivo*. *Tumour Biol.* 42: 1010428320914477.

## RESEARCH USE

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