

caspase-3 (3C119): sc-70497

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 Asp175-Ser176 to produce the p11 subunit and the p20 peptide. Subsequently, the p20 peptide is cleaved at Asp28-Ser29 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 an Asp216-Gly217 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 (3C119) is a mouse monoclonal antibody raised against full length caspase-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

caspase-3 (3C119) 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: caspase-3 (h): 293T Lysate: sc-113427, Jurkat whole cell lysate: sc-2204 or CCRF-HSB-2 cell lysate: sc-2265.

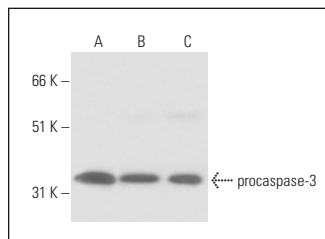
RESEARCH USE

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

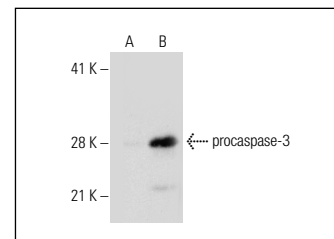
STORAGE

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

DATA



caspase-3 (3C119): sc-70497. Western blot analysis of procaspase-3 expression in CCRF-CEM (A), CCRF-HSB-2 (B) and Jurkat (C) whole cell lysates.



caspase-3 (3C119): sc-70497. Western blot analysis of procaspase-3 expression in non-transfected: sc-117752 (A) and human caspase-3 transfected: sc-113427 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Ding, L., et al. 2012. Transmissible gastroenteritis virus infection induces apoptosis through FasL- and mitochondria-mediated pathways. *Vet. Microbiol.* 158: 12-22.
- Stacchiotti, A., et al. 2014. Mitochondrial and metabolic dysfunction in renal convoluted tubules of obese mice: protective role of melatonin. *PLoS ONE* 9: e111141.
- Zhang, X.J., et al. 2017. 17β-estradiol protects against doxorubicin-induced cardiotoxicity in male Sprague-Dawley rats by regulating NADPH oxidase and apoptosis genes. *Mol. Med. Rep.* 15: 2695-2702.
- Aslan, A., et al. 2018. Ellagic acid impedes carbontetrachloride-induced liver damage in rats through suppression of NFκB, Bcl-2 and regulating Nrf-2 and caspase pathway. *Biomed. Pharmacother.* 105: 662-669.
- Kuri-García, A., et al. 2019. Preventive effect of an infusion of the aqueous extract of chaya leaves (*Cnidioscolus aconitifolius*) in an aberrant crypt foci rat model induced by azoxymethane and dextran sulfate sodium. *J. Med. Food* 22: 851-860.
- Xie, C., et al. 2020. CircSAMD4A regulates cell progression and epithelial-mesenchymal transition by sponging miR-342-3p via the regulation of FZD7 expression in osteosarcoma. *Int. J. Mol. Med.* 46: 107-118.
- Aslan, A., et al. 2020. The preventive effect of ellagic acid on brain damage in rats via regulating of Nrf-2, NFκB and apoptotic pathway. *J. Food Biochem.* 44: e13217.
- Demir, E. 2021. Therapeutic effect of curcumin and C60 fullerene against hyperglycemia-mediated tissue damage in diabetic rat lungs. *J. Bioenerg. Biomembr.* 53: 25-38.

CONJUGATES

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.