SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-3 p17 (D-12): sc-373730

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 p17 (D-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 50-86 within an internal region of caspase-3 p17 of human origin.

PRODUCT

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

caspase-3 p17 (D-12) is available conjugated to agarose (sc-373730 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373730 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373730 PE), fluorescein (sc-373730 FITC), Alexa Fluor® 488 (sc-373730 AF488), Alexa Fluor® 546 (sc-373730 AF546), Alexa Fluor® 594 (sc-373730 AF594) or Alexa Fluor® 647 (sc-373730 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373730 AF680) or Alexa Fluor® 790 (sc-373730 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373730 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

caspase-3 p17 (D-12) is recommended for detection of caspase-3 p17 and full length procaspase-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

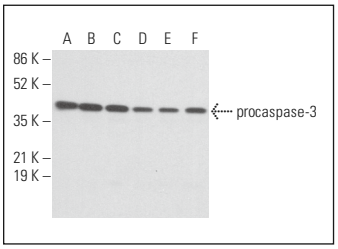
Suitable for use as control antibody for caspase-3 siRNA (h): sc-29237, caspase-3 siRNA (m): sc-29927, caspase-3 shRNA Plasmid (h): sc-29237-SH, caspase-3 shRNA Plasmid (m): sc-29927-SH, caspase-3 shRNA (h) Lentiviral Particles: sc-29237-V and caspase-3 shRNA (m) Lentiviral Particles: sc-29927-V.

Molecular Weight of procaspase-3: 32 kDa.

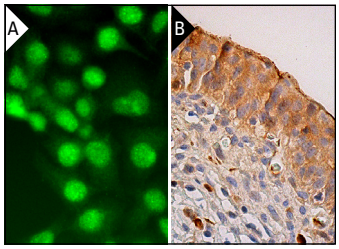
Molecular Weight of caspase-3 p17: 17 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or Ramos cell lysate: sc-2216.

DATA



caspase-3 (D-12): sc-373730. Western blot analysis of procaspase-3 expression in CCRF-CEM (**A**), Jurkat (**B**), MOLT-4 (**C**), BJAB (**D**), Ramos (**E**) and Hep G2 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



caspase-3 p17 (D-12): sc-373730. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2017. Cryptotanshinone induces Ros-mediated apoptosis in human gastric cancer cells. Oncotarget 8: 115398-115412.
2. Gao, Y., et al. 2020. Dihydroartemisinin ameliorates LPS-induced neuroinflammation by inhibiting the PI3K/Akt pathway. Metab. Brain Dis. 5: 661-672.
3. Ibrahim, Y.F., et al. 2021. Molecular mechanisms underlying the effect of diacerein on trichloroacetic acid-induced hepatic pre-neoplastic lesions in rats. Hum. Exp. Toxicol. 40: S788-S803.
4. Zhang, W., et al. 2022. Exosomes from adipose-derived stem cells inhibit inflammation and oxidative stress in LPS-acute kidney injury. Exp. Cell Res. 420: 113332.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.