SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-3 p17 (B-4): sc-271028

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 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

1. Nicholson, D., et al. 1995. Identification and inhibition of the ICE/CED-3 protease necessary for mammalian apoptosis. Nature 37: 37-43.
2. Cohen, G.M. 1997. Caspases: the executioners of apoptosis. Biochem. J. 326: 1-16.
3. Higgins, M.E., et al. 2001. Apoptosis-induced release of mature sterol regulatory element-binding proteins activates sterol-responsive genes. J. Lipid Res. 42: 1939-1946.

CHROMOSOMAL LOCATION

Genetic locus: CASP3 (human) mapping to 4q35.1.

SOURCE

caspase-3 p17 (B-4) is a mouse monoclonal antibody raised against amino acids 56-104 mapping near the N-terminus of 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.

caspase-3 p17 (B-4) is available conjugated to agarose (sc-271028 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271028 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271028 PE), fluorescein (sc-271028 FITC), Alexa Fluor® 488 (sc-271028 AF488), Alexa Fluor® 546 (sc-271028 AF546), Alexa Fluor® 594 (sc-271028 AF594) or Alexa Fluor® 647 (sc-271028 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271028 AF680) or Alexa Fluor® 790 (sc-271028 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

caspase-3 p17 (B-4) is recommended for detection of p17 subunit and full length precursor of caspase-3 of 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).

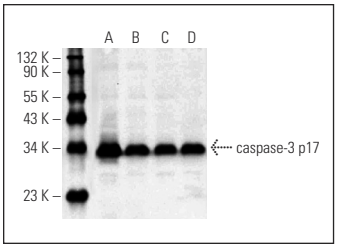
Suitable for use as control antibody for caspase-3 siRNA (h): sc-29237, caspase-3 shRNA Plasmid (h): sc-29237-SH and caspase-3 shRNA (h) Lentiviral Particles: sc-29237-V.

Molecular Weight of procaspase-3: 32 kDa.

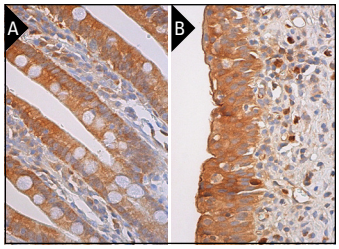
Molecular Weight of caspase-3 p17: 17 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, SUP-T1 whole cell lysate: sc-364796 or K-562 whole cell lysate: sc-2203.

DATA



caspase-3 p17 (B-4) HRP: sc-271028 HRP. Direct western blot analysis of caspase-3 p17 expression in BJAB (**A**), SUP-T1 (**B**), K-562 (**C**) and Hep G2 (**D**) whole cell lysates. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-HRP: sc-516732.



caspase-3 p17 (B-4): sc-271028. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Aydemir, E.A., et al. 2011. *Glycyrrhiza flavescens* subsp. *antalyensis* exerts antiproliferative effects on melanoma cells via altering TNF-α and IFN-α levels. Food Chem. Toxicol. 49: 820-828.
2. You, P., et al. 2018. Local level of TGF-β1 determines the effectiveness of dexamethasone through regulating the balance of Treg/Th17 cells in TNBS-induced mouse colitis. Exp. Ther. Med. 15: 3639-3649.
3. Silva-Hirschberg, C., et al. 2019. Cytotoxic impact of a perillyl alcohol-temozolomide conjugate, NEO212, on cutaneous T-cell lymphoma *in vitro*. Ther. Adv. Med. Oncol. 11: 1758835919891567.
4. Carneiro de Lima, D., et al. 2020. Simultaneous measurement of perillyl alcohol and its metabolite perillic acid in plasma and lung after inhalational administration in Wistar rats. Drug Test. Anal. 12: 268-279.

STORAGE

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