SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-3 (E-8): sc-7272

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.

SOURCE

caspase-3 (E-8) is a mouse monoclonal antibody epitope corresponding to amino acids 1-277 representing full length procaspase-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 (E-8) is available conjugated to agarose (sc-7272 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-7272 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7272 PE), fluorescein (sc-7272 FITC), Alexa Fluor® 488 (sc-7272 AF488), Alexa Fluor® 546 (sc-7272 AF546), Alexa Fluor® 594 (sc-7272 AF594) or Alexa Fluor® 647 (sc-7272 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7272 AF680) or Alexa Fluor® 790 (sc-7272 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, caspase-3 (E-8) is available conjugated to either TRITC (sc-7272 TRITC, 200 µg/ml) or Alexa Fluor® 405 (sc-7272 AF405, 200 µg/ml), for IF, IHC(P) and FCM.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

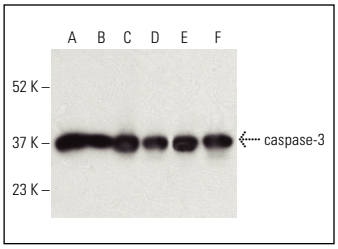
caspase-3 (E-8) is recommended for detection of caspase-3 and full length procaspase-3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) 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.

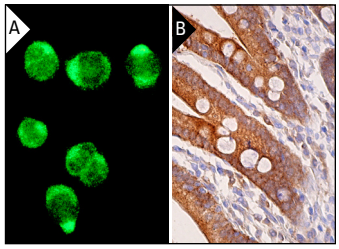
Molecular Weight of procaspase-3: 32 kDa.

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

DATA



caspase-3 (E-8): sc-7272. Western blot analysis of caspase-3 expression in MOLT-4 (**A**), SUP-T1 (**B**), BJAB (**C**), CCRF-CEM (**D**), NCI-H929 (**E**) and HuT 78 (**F**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



caspase-3 (E-8): sc-7272. Immunofluorescence staining of methanol-fixed HuT 78 cells showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Denning, M.F., et al. 1998. Protein kinase Cδ is activated by caspase-dependent proteolysis during ultraviolet radiation-induced apoptosis of human keratinocytes. J. Biol. Chem. 273: 29995-30002.
2. Lin, M.W., et al. 2018. 2-phenyl-4-quinolone (YT-1) induces G_2/M phase arrest and an intrinsic apoptotic mechanism in human leukemia cells. Oncol. Rep. 39: 1331-1337.
3. Yang, F., et al. 2019. FBXW2 suppresses migration and invasion of lung cancer cells via promoting β-catenin ubiquitylation and degradation. Nat. Commun. 10: 1382.
4. Qi, W., et al. 2020. Inhibitory mechanism of muscone in liver cancer involves the induction of apoptosis and autophagy. Oncol. Rep. 43: 839-850.
5. Lu, Y., et al. 2021. Inhibition of Bcl-2 and Bcl-x_L overcomes the resistance to the third-generation EGFR tyrosine kinase inhibitor osimertinib in non-small cell lung cancer. Mol. Med. Rep. 23: 1.

RESEARCH USE

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