SANTA CRUZ BIOTECHNOLOGY, INC.

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



BACKGROUND

Caspase-3, also known as apopain, SCA-1, Yama and CPP32, is an aspartatespecific 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 $\mu g\, lgG_{2a}$ 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 μ g/ml) or Alexa Fluor* 405 (sc-7272 AF405, 200 μ g/ml), for IF, IHC(P) and FCM.

Alexa Fluor $^{\circ}$ is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

Store at 4° C, **D0 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 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffinembedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 μ g per 1 x 10⁶ 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

- Denning, M.F., et al. 1998. Protein kinase Cδ is activated by caspasedependent proteolysis during ultraviolet radiation-induced apoptosis of human keratinocytes. J. Biol. Chem. 273: 29995-30002.
- 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 nonsmall cell lung cancer. Mol. Med. Rep. 23: 1.
- 3. Park, D., et al. 2022. Antitumor effect of cycloastragenol in colon cancer cells via p53 activation. Int J Mol Sci. 23: 15213.
- Nurlu Temel, E., et al. 2023. The β1 adrenergic blocker nebivolol ameliorates development of endotoxic acute lung injury. J. Clin. Med. 12: 1721.
- Pajarillo, E., et al. 2024. Dopaminergic REST/NRSF is protective against manganese-induced neurotoxicity in mice. J. Biol. Chem. 300: 107707.
- Keles, O.F., et al. 2025. The effect of selenium against cadmium-induced nephrotoxicity in rats: the role of the TRPM2 channel. Toxics 13: 87.

RESEARCH USE

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