

caspase-3 (3CSP03): sc-56046



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 (3CSP03) 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 (3CSP03) 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), 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.

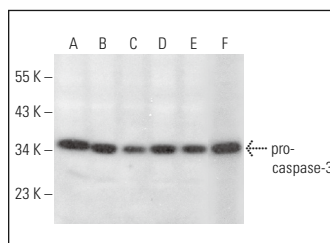
Molecular Weight of caspase-3 subunits: 11/17/20 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, Jurkat whole cell lysate: sc-2204 or MOLT-4 cell lysate: sc-2233.

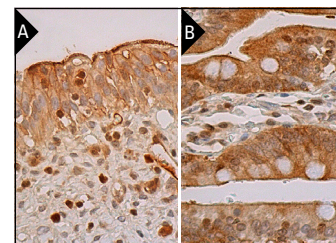
STORAGE

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

DATA



caspase-3 (3CSP03): sc-56046. Western blot analysis of procaspase-3 expression in CCRF-CEM (A), Jurkat (B), MOLT-4 (C), B.JAB (D), Ramos (E) and U266 (F) whole cell lysates.



caspase-3 (3CSP03): sc-56046. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic, membrane and nuclear staining of urothelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Yamaguchi, K., et al. 2011. Ultrasound-mediated interferon β gene transfection inhibits growth of malignant melanoma. *Biochem. Biophys. Res. Commun.* 411: 137-142.
2. Zhang, Y., et al. 2012. Binding of carbon nanotube to BMP receptor 2 enhances cell differentiation and inhibits apoptosis via regulating bHLH transcription factors. *Cell Death Dis.* 3: e308.
3. Shishido S.N., et al. 2013. The effect of antineoplastic drugs in a male spontaneous mammary tumor model. *PLoS ONE* 8: e64866
4. Wu, L., et al. 2014. Tuning cell autophagy by diversifying carbon nanotube surface chemistry. *ACS Nano* 8: 2087-2099.
5. Tepedelen, B.E., et al. 2017. A study on the anticarcinogenic effects of calcium fructoborate. *Biol. Trace Elem. Res.* 178: 210-217.
6. Ji, J., et al. 2018. XIAP limits autophagic degradation of Sox2 and is a therapeutic target in nasopharyngeal carcinoma stem cells. *Theranostics* 8: 1494-1510.
7. Singh, V., et al. 2019. Azoospermic infertility is associated with altered expression of DNA repair genes. *DNA Repair* 75: 39-47.
8. Dkhil, M.A., et al. 2020. Chlorogenic acid prevents hepatotoxicity in arsenic-treated mice: role of oxidative stress and apoptosis. *Mol. Biol. Rep.* 47: 1161-1171.

RESEARCH USE

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



See **caspase-3 p11 (C-6): sc-271759** for caspase-3 p11 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.