

# caspase-3 (T46L): sc-56055

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: CASP3 (human) mapping to 4q35.1; Casp3 (mouse) mapping to 8 B1.1.

## SOURCE

caspase-3 (T46L) is a mouse monoclonal antibody raised against full length caspase-3 of mouse origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

caspase-3 (T46L) 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)] 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.

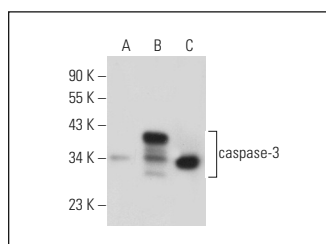
Molecular Weight of caspase-3 subunits: 11/17/20 kDa.

Positive Controls: caspase-3 (h4): 293 Lysate: sc-158344, PC-3 cell lysate: sc-2220 or Jurkat whole cell lysate: sc-2204.

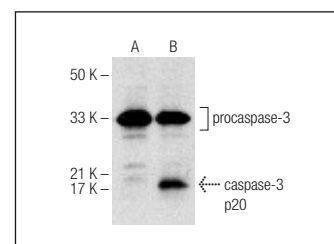
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



caspase-3 (T46L): sc-56055. Western blot analysis of caspase-3 expression in non-transfected 293: sc-110760 (A), human caspase-3 transfected 293: sc-158344 (B) and Jurkat (C) whole cell lysates.



Western blot analysis of cleaved caspase-3 expression in untreated (A) and Staurosporine (sc-3510) treated (B) HeLa whole cell lysates. Antibody tested include caspase-3 (T46L): sc-56055 (A, B). Note cleaved caspase-3 expression in lane B.

## SELECT PRODUCT CITATIONS

- Marzocco, S., et al. 2010. Pro-apoptotic effect of methylguanidine on hydrogen peroxide-treated rat glioma cell line. *Neurochem. Int.* 57: 518-524.
- Razi, S.S., et al. 2011. Dietary flaxseed protects against lung ischemia reperfusion injury via inhibition of apoptosis and inflammation in a murine model. *J. Surg. Res.* 171: e113-e121.
- Cevik, O., et al. 2012. Lycopene inhibits caspase-3 activity and reduces oxidative organ damage in a rat model of thermal injury. *Burns* 38: 861-871.
- Ersahin, M., et al. 2012. Montelukast inhibits caspase-3 activity and ameliorates oxidative damage in the spinal cord and urinary bladder of rats with spinal cord injury. *Prostaglandins Other Lipid Mediat.* 99: 131-139.
- Wang, J., et al. 2012. *In vivo* induction of apoptosis by fucoxanthin, a marine carotenoid, associated with down-regulating STAT3/EGFR signaling in sarcoma 180 (S180) xenografts-bearing mice. *Mar. Drugs* 10: 2055-2068.
- Cevik, O., et al. 2013. Beneficial effects of quercetin on rat urinary bladder after spinal cord injury. *J. Surg. Res.* 183: 695-703.

## RESEARCH USE

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