SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-7 (B4-G2): sc-56067

BACKGROUND

A unique family of Cysteine proteases has been described that differs in sequence, structure and substrate specificity from any previously described protease family. This family, CED-3/caspase-1, is comprised of caspase-1, caspase-2, caspase-3, caspase-4, caspase-6, caspase-7 (also designated Mch3, ICE-LAP3 or CMH-1), caspase-9 and caspase-10. CED-3/caspase-1 family members function as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. Poly(ADP-ribose) polymerase plays an integral role in surveying for DNA mutations and double strand breaks. Caspase-3, caspase-7 and caspase-9, but not caspase-1, have been shown to cleave the nuclear protein PARP into an apoptotic fragment. Caspase-6, but not caspase-3, has been shown to cleave the nuclear lamins which are critical to maintaining the integrity of the nuclear envelope and cellular morphology. Caspase-10 has been shown to activate caspase-3 and caspase-7 in response to apoptotic stimuli.

REFERENCES

1. Tiso, N., et al. 1996. Chromosomal localization of the human genes, CPP32, Mch2, Mch3 and Ich-1, involved in cellular apoptosis. Biochem. Biophys. Res. Commun. 225: 983-989.
2. Cohen, G.M. 1997. Caspases: the executioners of apoptosis. Biochem. J. 326: 1-16.
3. Chandler, J.M., et al. 1998. Different subcellular distribution of caspase-3 and caspase-7 following Fas-induced apoptosis in mouse liver. J. Biol. Chem. 273: 10815-10818.
4. Marcelli, M., et al. 1999. Signaling pathway activated during apoptosis of the prostate cancer cell line LNCaP: overexpression of caspase-7 as a new gene therapy strategy for prostate cancer. Cancer Res. 59: 382-390.
5. Germain, M., et al. 1999. Cleavage of automodified poly(ADP-ribose) polymerase during apoptosis. Evidence for involvement of caspase-7. J. Biol. Chem. 274: 28379-28384.
6. Araya, R., et al. 2002. Yeast two-hybrid screening using constitutive-active caspase-7 as bait in the identification of PA28γ as an effector caspase substrate. Cell Death Differ. 9: 322-328.

CHROMOSOMAL LOCATION

Genetic locus: CASP7 (human) mapping to 10q25.3; Casp7 (mouse) mapping to 19 D2.

SOURCE

caspase-7 (B4-G2) is a mouse monoclonal antibody.

PRODUCT

Each vial contains 100 µg IgG_1 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-7 (B4-G2) is recommended for detection of procaspase-7 (34 kDa) and the large subunit of cleaved caspase-7 (19 kDa) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for caspase-7 siRNA (h): sc-29929, caspase-7 siRNA (m): sc-29928, caspase-7 shRNA Plasmid (h): sc-29929-SH, caspase-7 shRNA Plasmid (m): sc-29928-SH, caspase-7 shRNA (h) Lentiviral Particles: sc-29929-V and caspase-7 shRNA (m) Lentiviral Particles: sc-29928-V.

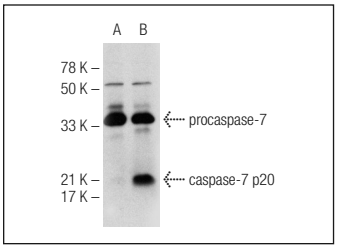
Molecular Weight of procaspase-7 splice variants: 28-38 kDa.

Molecular Weight of caspase-7 p20 subunit: 20 kDa.

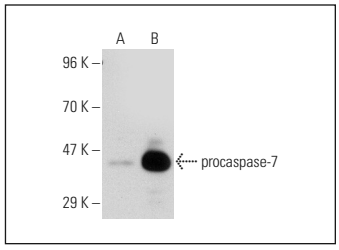
Molecular Weight of caspase-7 p10 subunit: 10 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa + UV irradiated cell lysate: sc-2221 or caspase-7 (m): 293T Lysate: sc-119028.

DATA



caspase-7 (B4-G2): sc-56067. Western blot analysis of caspase-7 expression in untreated (**A**) and Staurosporine (sc-3510) treated (**B**) HeLa whole cell lysates. Note cleaved caspase-7 expression in lane **B**.



caspase-7 (B4-G2): sc-56067. Western blot analysis of procaspase-7 expression in non-transfected: sc-117752 (**A**) and mouse caspase-7 transfected: sc-119028 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Latorre, E., et al. 2012. Downregulation of HuR as a new mechanism of doxorubicin resistance in breast cancer cells. Mol. Cancer 11: 13.
2. Leão, M., et al. 2013. Discovery of a new small-molecule inhibitor of p53-MDM2 interaction using a yeast-based approach. Biochem. Pharmacol. 85: 1234-1245.
3. Pereira, C., et al. 2014. Potential small-molecule activators of caspase-7 identified using yeast-based caspase-3 and -7 screening assays. Eur. J. Pharm. Sci. 54: 8-16.

RESEARCH USE

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

PROTOCOLS

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