

cleaved caspase-4 p10 (h290): sc-22174

BACKGROUND

Caspase-4 and caspase-5 belong to a unique family of cysteine proteases, termed peptidase C14, that differ in sequence, structure and substrate specificity from other protease families. Members of this family function as key components of the apoptotic machinery and act to destroy specific target proteins which are critical to cellular longevity. During apoptosis, cleavage fragments of caspase-4 and caspase-5 are generated either by autocatalysis or caspase-8 interaction to form two fragments (p10 and p20). These fragments go on to form a heterotetramer created from two anti-parallel heterodimers. The activated form of caspase-4 will act to cleave and activate caspase-1, thereby mediating its role in apoptosis. Caspase-5 fragments form a protease that strictly targets Asp in the P1 position, preferring to target the sequence Tyr-Val-Ala-Asp[-]. Caspase-4 and caspase-5 are widely expressed throughout the body, however, lung tissue shows the highest amount.

REFERENCES

- Lindahl, T., et al. 1995. Post-translational modification of poly (ADP-ribose) polymerase induced by DNA strand breaks. *Trends Biochem. Sci.* 20: 405-411.
- Duan, H., et al. 1996. ICE-LAP3, a novel mammalian homologue of the *Caenorhabditis elegans* cell death protein Ced-3 is activated during Fas- and tumor necrosis factor-induced apoptosis. *J. Biol. Chem.* 271: 1621-1625.
- Fernandes-Alnemri, T.F., et al. 1996. *In vitro* activation of CPP32 and Mch3 by Mch4, a novel human apoptotic cysteine protease containing two FADD-like domains. *Proc. Natl. Acad. Sci. USA* 93: 7464-7469.
- Duan, H., et al. 1996. ICE-LAP6, a novel member of the ICE/Ced-3 gene family, is activated by the cytotoxic T cell protease granzyme B. *J. Biol. Chem.* 271: 16720-16724.
- Simbulan-Rosenthal, C.M., et al. 1996. The expression of poly (ADP-ribose) polymerase during differentiation-linked DNA replication complex. *Biochemistry* 35: 11622-11633.
- Casciola-Rosen, L., et al. 1996. Apopain/CPP32 cleaves proteins that are essential for cellular repair: a fundamental principle of apoptotic death. *J. Exp. Med.* 183: 1957-1964.
- Takahashi, A., et al. 1996. Cleavage of lamin A by Mch2 a but not CPP32: multiple interleukin 1 β -converting enzyme-related proteases with distinct substrate recognition properties are active in apoptosis. *Proc. Natl. Acad. Sci. USA* 93: 8395-8400.

CHROMOSOMAL LOCATION

Genetic locus: CASP4 (human) mapping to 11q22.3.

SOURCE

cleaved caspase-4 p10 (h290) is a goat polyclonal antibody raised against a short amino acid sequence containing the neoepitope at Ala 290 of caspase-4 p10 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22174 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

cleaved caspase-4 p10 (h290) is recommended for detection of the p10 subunit of caspase-4 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with full length caspase-4.

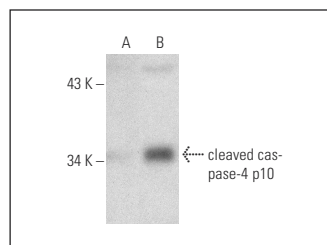
Molecular Weight of cleaved caspase-4 p10: 10 kDa.

Positive Controls: caspase-4 (h2): 293T Lysate: sc-175856.

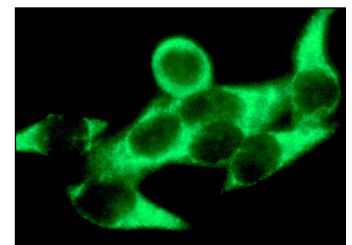
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



cleaved caspase-4 p10 (h290): sc-22174. Western blot analysis of cleaved caspase-4 p10 expression in non-transfected: sc-117752 (A) and human caspase-4 transfected: sc-175856 (B) 293T whole cell lysates.



cleaved caspase-4 p10 (h290): sc-22174. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Wang, H., et al. 2011. Role of death receptor, mitochondrial and endoplasmic reticulum pathways in different stages of degenerative human lumbar disc. *Apoptosis* 16: 990-1003.

STORAGE

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