SANTA CRUZ BIOTECHNOLOGY, INC.

caspase-9 (100-270): sc-4704

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, termed Ced-3/caspase-1, is comprised of caspase-1, caspase-2, caspase-3, caspase-4, caspase-6 and 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 112 kDa nuclear protein PARP into an 85 kDa 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. Duan, H., Chinnaiyan, A.M., Hudson, P.L., Wing, J.P., He, W.W., and Dixit, V.M. 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.
2. Fernandes-Alnemri, T.F., Armstrong, R.C., Krebs, J., Srinivasula, S.M., Wang, L., Bullrich, F., Fritz, L.C., Trapani, J.A., Tomaselli, K.J., Litwack, G., and Alnemri, E.S. 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.
3. Duan, H., Orth, K., Chinnaiyan, A.M., Poirier, G.G., Froelich, C.J., He, W.W., and Dixit, V.M. 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.
4. Simbulan-Rosenthal, C.M., Rosenthal, D.S., Hilz, H., Hickey, R., Malkas, L., Applegren, N., Wu, Y., Bers, G., Smulson, M.E. 1996. The expression of poly (ADP-ribose) polymerase during differentiation-linked DNA replication complex. Biochem. 35: 11622-11633.
5. Lindahl, T., Satoh, M.S., Poirier, G.G., and Klungland, A. 1995. Post-translational modification of poly (ADP-ribose) polymerase induced by DNA strand breaks. Trends Biochem. Sci. 20: 405-411.
6. Casciola-Rosen, L., Nicholson, D.W., Chong, T., Rowan, K.R., Thornberry, N.A., Miller, D.K., and Rosen, A. 1996. Apopain/CPP32 cleaves proteins that are essential for cellular repair: a fundamental principle of apoptotic death. J. Exp. Med. 183: 1957-1964.
7. Takahashi, A., Alnemri, E.S., Lazebnik, Y.A., Fernandes-Alnemri, T., Litwack, G., Moir, R.D., Goldman, R.D., Poirier, G.G., Kaufmann, S.H., and Earnshaw, W.C. 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. 93: 8395-8400.

SOURCE

caspase-9 (100-270) is expressed in *E. coli* as a 46 kDa tagged fusion protein corresponding to amino acids 100-270 of caspase-9 of human origin.

PRODUCT

caspase-9 (100-270) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 50 µg purified protein in PBS containing 5 mM DTT and 50% glycerol.

APPLICATIONS

caspase-9 (100-270) is suitable as a substrate for PKC α: sc-4820 and as a Western blotting control for sc-8355.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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