SANTA CRUZ BIOTECHNOLOGY, INC.

CAD (G-11): sc-393029

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ced/ICE or caspase family of cysteine proteases plays a pivotol role in mediating apoptosis through the proteolysis of specific targets. Among the targets are poly(ADP-ribose) polymerase (PARP), Gelsolin, ICAD (inhibitor of CAD, also designated DFF-45) and the nuclear lamins. CAD (caspase-activated deoxyribonuclease), also designated CPAN (caspase-activated nuclease) and DFF40, is a DNase that is responsible for DNA degradation during apoptosis. Caspase-3 acts to dissociate CAD from ICAD, allowing CAD to enter the nucleus and degrade DNA.

REFERENCES

1. Fernandes-Alnemri, T., et al. 1995. MCH3, a novel human apoptotic cysteine protease highly related to CPP32. Cancer Res. 55: 6045-6052.
2. Takahashi, A., et al. 1996. Cleavage of lamin A by Mch2 α 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.
3. Liu, X., et al. 1997. DFF, a hetrodimeric protein that functions downstream of caspase-3 to trigger DNA fragmentation during apoptosis. Cell 89: 175-184.
4. Salvesen, G.S., et al. 1997. Caspases: intracellular signaling by proteolysis. Cell 91: 443-446.
5. Kothakota, S., et al. 1997. Caspase-3-generated fragment of gelsolin: effector of morphological change in apoptosis. Science 278: 294-298.
6. Enari, M., et al. 1998. A caspase-activated Dnase that degrades DNA during apoptosis. Nature 391: 43-50.
7. Sakahira, H., et al. 1998. Cleavage of CAD inhibitor in CAD activation and DNA degradation during apoptosis. Nature 391: 96-99.
8. Halenbeck, R., et al. 1998. CPAN, a human nuclease regulated by the caspase-sensitive inhibitor DFF45. Curr. Biol. 8: 537-540.
9. Shiokawa, D., et al. 2007. Stage-specific expression of DNaseγ during B-cell development and its role in B-cell receptor-mediated apoptosis in WEHI-231 cells. Cell Death Differ. 14: 992-1000.

CHROMOSOMAL LOCATION

Genetic locus: DFFB (human) mapping to 1p36.32; Dffb (mouse) mapping to 4 E2.

SOURCE

CAD (G-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 310-338 at the C-terminus of CAD of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393029 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CAD (G-11) is recommended for detection of CAD of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 CAD siRNA (h): sc-29871, CAD siRNA (m): sc-29872, CAD shRNA Plasmid (h): sc-29871-SH, CAD shRNA Plasmid (m): sc-29872-SH, CAD shRNA (h) Lentiviral Particles: sc-29871-V and CAD shRNA (m) Lentiviral Particles: sc-29872-V.

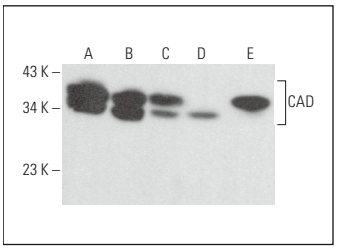
Molecular Weight of CAD: 40 kDa.

Positive Controls: A549 cell lysate: sc-2413, AMJ2-C8 whole cell lysate: sc-364366 or Jurkat nuclear extract: sc-2132.

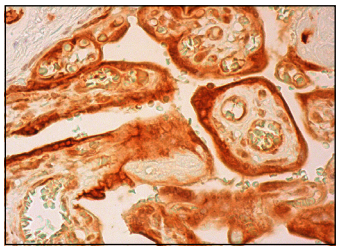
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CAD (G-11): sc-393029. Western blot analysis of CAD expression in Jurkat (**A**) and MOLT-4 (**B**) nuclear extracts and A549 (**C**), BYDP (**D**) and AMJ2-C8 (**E**) whole cell lysates.



CAD (G-11): sc-393029. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of trophoblastic cells.

STORAGE

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

RESEARCH USE

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