

CAD (H-1): sc-5295

BACKGROUND

The Ced/ICE or caspase family of cysteine proteases plays a pivotal role in mediating apoptosis through the proteolysis of specific targets. Among the targets are poly(ADP-ribose) polymerase (PARP), Gelsolin, DFF-45 (also designated ICAD, for inhibitor of CAD) 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. CAD is inhibited by DFF45/ICAD. 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. Salvesen, G.S., et al. 1997. Caspases: intracellular signaling by proteolysis. *Cell* 91: 443-446.
4. Kothakota, S., et al. 1997. Caspase-3-generated fragment of Gelsolin: effector of morphological change in apoptosis. *Science* 278: 294-298.

CHROMOSOMAL LOCATION

Genetic locus: DFFB (human) mapping to 1p36.32.

SOURCE

CAD (H-1) is a mouse monoclonal antibody raised against amino acids 1-338 representing full length.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CAD (H-1) is available conjugated to agarose (sc-5295 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP.

APPLICATIONS

CAD (H-1) is recommended for detection of CAD 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), 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 shRNA Plasmid (h): sc-29871-SH and CAD shRNA (h) Lentiviral Particles: sc-29871-V.

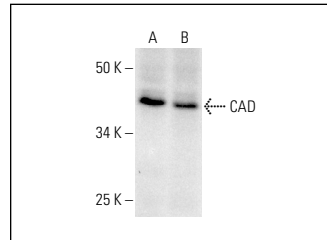
Molecular Weight of CAD: 40 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, Jurkat nuclear extract: sc-2132 or LNCaP cell lysate: sc-2231.

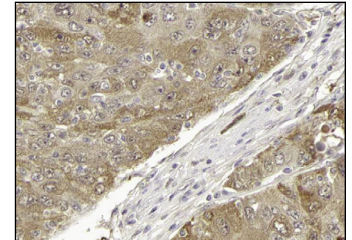
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CAD (H-1): sc-5295. Western blot analysis of CAD expression in Jurkat nuclear extract (A) and LNCaP whole cell lysate (B).



CAD (H-1): sc-5295. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver cancer showing cytoplasmic staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Ninios, Y.P., et al. 2010. Histone H1 subtype preferences of DFF40 and possible nuclear localization of DFF40/45 in normal and trichostatin A-treated NB4 leukemic cells. *Apoptosis* 15: 128-138.
2. Ninios, Y.P., et al. 2010. Differential sensitivity of human leukemic cell lines to the histone deacetylase inhibitor, trichostatin A. *Leuk. Res.* 34: 786-792.

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.

PROTOCOLS

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