

# CAD (C-19): sc-8259

## 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  $\alpha$  but not CPP32: multiple interleukin-1 $\beta$ -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.
5. Liu, X., et al. 1997. DFF, a heterodimeric protein that functions downstream of caspase-3 to trigger DNA fragmentation during apoptosis. *Cell* 89: 175-184.
6. Shiokawa, D., et al. 2007. Stage-specific expression of DNase $\gamma$  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.

## SOURCE

CAD (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CAD of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. CAD (C-19) is available conjugated to agarose (sc-8259 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-8259 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

CAD (C-19) 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  $\mu$ g per 100-500  $\mu$ 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).

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.

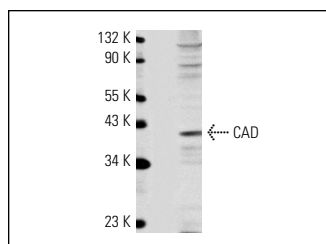
Molecular Weight of CAD: 40 kDa.

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

## RECOMMENDED 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## DATA



CAD (C-19): sc-8259. Western blot analysis of CAD expression in K-562 nuclear extract.

## SELECT PRODUCT CITATIONS

1. 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.
2. Meslin, F., et al. 2011. hSMG-1 is a granzyme B-associated stress-responsive protein kinase. *J. Mol. Med.* 89: 411-421.

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Try **CAD (F-11): sc-374067** or **CAD (G-11): sc-393029**, our highly recommended monoclonal alternatives to CAD (C-19).