

# CAD (K-13): sc-34156

## 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. 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 DFF-45. *Curr. Biol.* 8: 537-540.

## CHROMOSOMAL LOCATION

Genetic locus: DFFB (human) mapping to 1p36.3; Dffb (mouse) mapping to 4 E2.

## SOURCE

CAD (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CAD of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-34156 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.

## APPLICATIONS

CAD (K-13) is recommended for detection of CAD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 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: 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™ 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) 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CAD (F-11): sc-374067** or **CAD (G-11): sc-393029**, our highly recommended monoclonal alternatives to CAD (K-13).