

CAD (F-11): sc-374067

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, 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.

CHROMOSOMAL LOCATION

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

SOURCE

CAD (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of CAD of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CAD (F-11) is available conjugated to agarose (sc-374067 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374067 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374067 PE), fluorescein (sc-374067 FITC), Alexa Fluor[®] 488 (sc-374067 AF488), Alexa Fluor[®] 546 (sc-374067 AF546), Alexa Fluor[®] 594 (sc-374067 AF594) or Alexa Fluor[®] 647 (sc-374067 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-374067 AF680) or Alexa Fluor[®] 790 (sc-374067 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374067 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

CAD (F-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) 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.

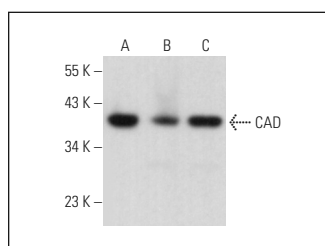
Molecular Weight of CAD: 40 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Jurkat nuclear extract: sc-2132 or Neuro-2A whole cell lysate: sc-364185.

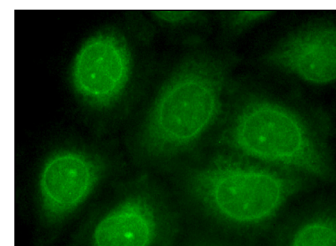
RECOMMENDED SUPPORT REAGENTS

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.

DATA



CAD (F-11): sc-374067. Western blot analysis of CAD expression in Jurkat nuclear extract (A) and Neuro-2A (B) and HL-60 (C) whole cell lysates.



CAD (F-11): sc-374067. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Maruoka, M., et al. 2021. Caspase cleavage releases a nuclear protein fragment that stimulates phospholipid scrambling at the plasma membrane. *Mol. Cell* 81: 1397-1410.e9.
- Ali, M., et al. 2022. Small-molecule targeted therapies induce dependence on DNA double-strand break repair in residual tumor cells. *Sci. Transl. Med.* 14: eabc7480.
- Ming, X., et al. 2022. Porcine enteric coronavirus PEDV induces the ROS-ATM and caspase7-CAD-γH2AX signaling pathways to foster its replication. *Viruses* 14: 1782.
- Kim, S.H., et al. 2022. Chemical inhibition of TRAF6-TAK1 axis as therapeutic strategy of endotoxin-induced liver disease. *Biomed. Pharmacother.* 155: 113688.
- Dörflinger, B., et al. 2022. Mitochondria supply sub-lethal signals for cytokine secretion and DNA-damage in *H. pylori* infection. *Cell Death Differ.* 29: 2218-2232.
- Gradzka-Boberda, S., et al. 2022. Pattern recognition receptors of nucleic acids can cause sublethal activation of the mitochondrial apoptosis pathway during viral infection. *J. Virol.* 96: e0121222.

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.