SANTA CRUZ BIOTECHNOLOGY, INC.

ICAD (F-8): sc-17816

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The CED/ICE 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/ICAD and the nuclear lamins. PARP is a nuclear protein that is specifically cleaved by CPP32 and Mch2, but not by ICE, into a signature apoptotic fragment. Gelsolin is cleaved by CPP32 to an active form that severs Actin filaments in a Ca^{2+}-independent manner. In addition to binding Actin, gelsolin can form complexes with fibronectin, which may be important for localizing gelsolin to inflammatory sites. DFF-45/ICAD, the subunit of DNA fragmentation factor, is cleaved by CPP32 to generate an active factor that induces DNA fragmentation. The nuclear Lamin A is cleaved by Mch2, but not CPP32. Nuclear Lamin B is fragmented as a consequence of apoptosis by an unidentified member of the ICE family.

REFERENCES

1. Lind, S.E., et al. 1984. Human plasma gelsolin binds to Fibronectin. J. Biol. Chem. 259: 13262-13266.
2. Fernandes-Alnemri, T., et al. 1995. Mch3, a novel human apoptotic cysteine protease highly related to CPP32. Cancer Res. 55: 6045-6052.
3. 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.
4. Rao, L., et al. 1996. Lamin proteolysis facilitates nuclear events during apoptosis. J. Cell Biol. 135: 1441-1455.

CHROMOSOMAL LOCATION

Genetic locus: DFFA (human) mapping to 1p36.22.

SOURCE

ICAD (F-8) is a mouse monoclonal antibody raised against amino acids 1-331 representing full length ICAD of human origin.

PRODUCT

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

ICAD (F-8) is available conjugated to agarose (sc-17816 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17816 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17816 PE), fluorescein (sc-17816 FITC), Alexa Fluor® 488 (sc-17816 AF488), Alexa Fluor® 546 (sc-17816 AF546), Alexa Fluor® 594 (sc-17816 AF594) or Alexa Fluor® 647 (sc-17816 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17816 AF680) or Alexa Fluor® 790 (sc-17816 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ICAD (F-8) is recommended for detection of ICAD of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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 ICAD siRNA (h): sc-35624, ICAD shRNA Plasmid (h): sc-35624-SH and ICAD shRNA (h) Lentiviral Particles: sc-35624-V.

Molecular Weight of DFF-45 splice variant: 45 kDa.

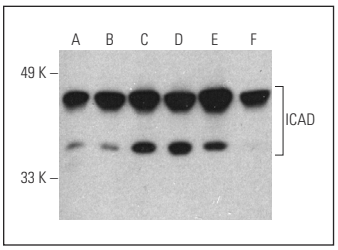
Molecular Weight of DFF-35 splice variant: 35 kDa.

Positive Controls: U-937 cell lysate: sc-2239, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

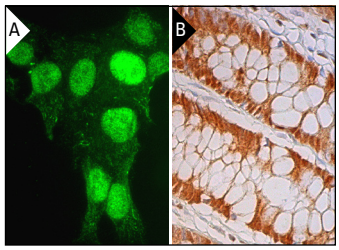
RECOMMENDED SUPPORT REAGENTS

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



ICAD (F-8) HRP: sc-17816 HRP. Direct western blot analysis of ICAD expression in U-937 (**A**), HeLa (**B**), K-562 (**C**), Jurkat (**D**), HT-1080 (**E**) and Hep G2 (**F**) whole cell lysates.



ICAD (F-8): sc-17816. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Braunstein, I., et al. 2020. Opposing effects of polysulfides and thioredoxin on apoptosis through caspase persulfidation. J. Biol. Chem. 295: 3590-3600.

RESEARCH USE

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