SANTA CRUZ BIOTECHNOLOGY, INC.

Smac (C-10): sc-393118

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The activation of caspases is a key regulatory step in apoptosis. Once cytochrome c is released from the mitochondria into the cytosol, it binds Apaf-1 to form an oligomeric cytochrome c/Apaf-1 complex, which induces caspase activation. Inhibitors of apoptosis proteins (IAPs), are a family of proteins that regulate the cytochrome c/Apaf-1 caspase activating pathway. Like cytochrome c, Smac (for second mitochondria-derived activator of caspase, also designated DIABLO in mouse for direct IAP binding protein with low PI) promotes caspase activation in the cytochrome c/Apaf-1/caspase-9 pathway by binding IAPs and preventing them from inhibiting caspases. In healthy cells, Smac is a mitochondrial protein, but when cells undergo apoptosis, Smac is released into the cytosol.

CHROMOSOMAL LOCATION

Genetic locus: DIABLO (human) mapping to 12q24.31.

SOURCE

Smac (C-10) is a mouse monoclonal antibody raised against amino acids 63-239 mapping at the C-terminus of Smac of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Smac (C-10) is available conjugated to agarose (sc-393118 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393118 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393118 PE), fluorescein (sc-393118 FITC), Alexa Fluor® 488 (sc-393118 AF488), Alexa Fluor® 546 (sc-393118 AF546), Alexa Fluor® 594 (sc-393118 AF594) or Alexa Fluor® 647 (sc-393118 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393118 AF680) or Alexa Fluor® 790 (sc-393118 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Smac (C-10) is recommended for detection of Smac of 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), 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 Smac siRNA (h): sc-36505, Smac shRNA Plasmid (h): sc-36505-SH and Smac shRNA (h) Lentiviral Particles: sc-36505-V.

Molecular Weight of Smac: 21/27 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Caki-1 cell lysate: sc-2224 or DU 145 cell lysate: sc-2268.

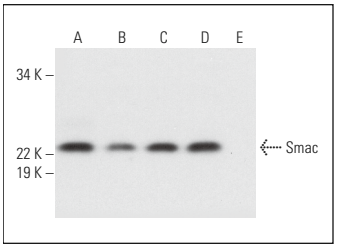
STORAGE

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

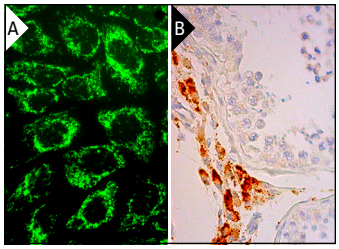
RESEARCH USE

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

DATA



Smac (C-10): sc-393118. Western blot analysis of Smac expression in Hep G2 (**A**), HeLa (**B**), Caki-1 (**C**), DU 145 (**D**) and KNRK (**E**) whole cell lysates. Note lack of reactivity with rat Smac in lane **E**.



Smac (C-10): sc-393118. Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Shao, L.N., et al. 2016. Effects of autophagy regulation of tumor-associated macrophages on radiosensitivity of colorectal cancer cells. Mol. Med. Rep. 13: 2661-2670.
2. Tong, K., et al. 2017. Isoimperatorin induces apoptosis of the SGC-7901 human gastric cancer cell line via the mitochondria-mediated pathway. Oncol. Lett. 13: 518-524.
3. Xue, M., et al. 2017. Apoptosis is induced by docosahexaenoic acid in breast cancer cells via death receptor and mitochondria-mediated pathways. Mol. Med. Rep. 16: 978-982.
4. Li, Y., et al. 2021. Overexpression of BIRC6 driven by EGF-JNK-HECTD1 signaling is a potential therapeutic target for triple-negative breast cancer. Mol. Ther. Nucleic Acids 26: 798-812.
5. García-Gutiérrez, L., et al. 2022. Interaction of LATS1 with Smac links the MST2/Hippo pathway with apoptosis in an IAP-dependent manner. Cell Death Dis. 13: 692.
6. Marín-Rubio, J.L., et al. 2022. A dual role for FADD in human precursor T-cell neoplasms. Int. J. Mol. Sci. 23: 15157.
7. Imbaby, S., et al. 2023. The GSTP1/MAPKs/BIM/SMAC modulatory actions of nitazoxanide: bioinformatics and experimental evidence in subcutaneous solid Ehrlich carcinoma-inoculated mice. Life Sci. 319: 121496.
8. Chen, Q., et al. 2023. Cathepsin H knockdown reverses radioresistance of hepatocellular carcinoma via metabolic switch followed by apoptosis. Int. J. Mol. Sci. 24: 5257.
9. Gao, B., et al. 2024. USP36 inhibits apoptosis by deubiquitinating cIAP1 and survivin in colorectal cancer cells. J. Biol. Chem. 300: 107463.

PROTOCOLS

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