

Smac (C-20): sc-12684

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.

REFERENCES

- Zou, H., et al. 1997. Apaf-1, a human protein homologous to *C. elegans* Ced-4, participates in cytochrome c-dependent activation of caspase-3. *Cell* 90: 405-413.
- Deveraux, Q.L., et al. 1998. IAPs block apoptosis events induced by caspase-8 and cytochrome c by direct inhibition of distinct caspases. *EMBO J.* 17: 2215-2223.
- Thornberry, N.A., et al. 1998. Caspase: enemies within. *Science* 281: 1312-1316.
- Du, Ch., et al. 2000. Smac, a mitochondrial protein that promotes cytochrome c-dependent caspase activation by eliminating IAP inhibition. *Cell* 102: 33-42.
- Verhagen, A.M., et al. 2000. Identification of DIABLO, a mammalian protein that promotes apoptosis by binding to and antagonizing IAP proteins. *Cell* 102: 43-53.
- Hao, Y., et al. 2004. Apollon ubiquitinates SMAC and caspase-9, and has an essential cytoprotection function. *Nat. Cell Biol.* 6: 849-860.

CHROMOSOMAL LOCATION

Genetic locus: DIABLO (human) mapping to 12q24.31; Diablo (mouse) mapping to 5 F.

SOURCE

Smac (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Smac of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12684 P, (100 µg 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

Smac (C-20) is recommended for detection of precursor and mature Smac of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

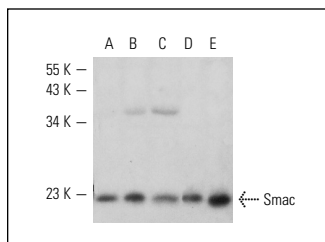
Smac (C-20) is also recommended for detection of precursor and mature Smac in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Smac siRNA (h): sc-36505, Smac siRNA (m): sc-36506, Smac shRNA Plasmid (h): sc-36505-SH, Smac shRNA Plasmid (m): sc-36506-SH, Smac shRNA (h) Lentiviral Particles: sc-36505-V and Smac shRNA (m) Lentiviral Particles: sc-36506-V.

Molecular Weight of Smac: 21/27 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Caki-1 cell lysate: sc-2224 or DU 145 cell lysate: sc-2268.

DATA



Smac (C-20): sc-12684. Western blot analysis of Smac expression in HeLa (A), Caki-1 (B), DU 145 (C), Hep G2 (D) and KNRK (E) whole cell lysates.

SELECT PRODUCT CITATIONS

- Tang, X., et al. 2007. CP-31398 restores mutant p53 tumor suppressor function and inhibits UVB-induced skin carcinogenesis in mice. *J. Clin. Invest.* 117: 3753-3764.

RESEARCH USE

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

PROTOCOLS

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


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Try **Smac (C-10): sc-393118** or **Smac (56): sc-136302**, our highly recommended monoclonal alternatives to Smac (C-20).