

PRODUCT INFORMATION



Smac (C-Term) Rabbit Monoclonal Antibody (Clone RM271)

Item No. 32221

Overview and Properties

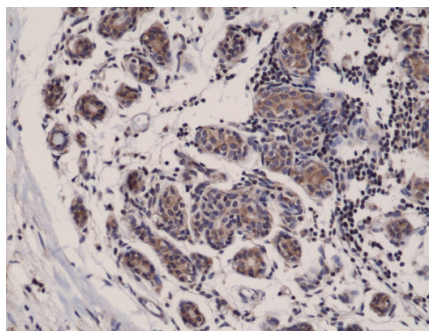
Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	DIABLO, Diablo Homolog, Mitochondrial, Direct IAP-binding Protein with Low pl, Second Mitochondria-derived Activator of Caspase
Immunogen:	Peptide from the C-terminal region of human Smac
Cross Reactivity:	(+) Smac
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM271
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:500-1:1,000 for IHC and 1:1,000-1:2,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: HeLa cell lysates
Lane 2: MCF-7 cell lysates

WB of HeLa cell and MCF-7 cell lysates using Smac (C-Term) Rabbit Monoclonal Antibody (Clone RM271) at a dilution of 1:1,000.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue sections using Smac (C-Term) Rabbit Monoclonal Antibody (Clone RM271) at a dilution of 1:1,000.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Smac is a mitochondrial protein involved in the initiation of apoptosis.¹ It is a ubiquitously expressed α -helical protein that forms homodimers.^{1,2} It is localized to the mitochondria but is released following apoptotic stimuli into the cytoplasm, where it binds to inhibitor of apoptosis proteins (IAPs), which are overexpressed in a variety of cancer cells.^{1,3} Smac binding to IAPs blocks their inhibitory effect on caspase-3, -7, and -9 and leads to the activation of apoptosis.^{3,4} Knockout of *DIABLO*, the gene encoding Smac, in colon cancer cells *in vitro* induces resistance to apoptosis induced by NSAIDs and TRAIL, but not cisplatin (Item No. 13119), mitomycin C (Item No. 11435), or camptothecin (Item No. 11694).⁵ Diablo knockout in mice does not induce changes in apoptosis or tumorigenesis, indicating a redundancy of its function.³ Overexpression of *DIABLO* *in vitro* does not affect basal levels of apoptosis but increases the sensitivity of cells to other apoptotic stimuli.⁶ Cayman's Smac C-Term Rabbit Monoclonal Antibody (Clone RM271) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Du, C., Fang, M., Li, Y., *et al.* Smac, a mitochondrial protein that promotes cytochrome c-dependent caspase activation by eliminating IAP inhibition. *Cell* **102(1)**, 33-42 (2000).
2. Wu, G., Chai, J., Suber, T.L., *et al.* Structural basis of IAP recognition by Smac/DIABLO. *Nature* **408(6815)**, 1008-1012 (2000).
3. Abbas, R. and Larisch, S. Targeting XIAP for promoting cancer cell death-the story of ARTS and SMAC. *Cells* **9(3)**, 663 (2020).
4. Shi, Y. A structural view of mitochondria-mediated apoptosis. *Nat. Struct. Biol.* **8(5)**, 394-401 (2001).
5. Kohli, M., Yu, J., Seaman, C., *et al.* SMAC/Diablo-dependent apoptosis induced by nonsteroidal antiinflammatory drugs (NSAIDs) in colon cancer cells. *Proc. Natl. Acad. Sci. U.S.A.* **101(48)**, 16897-16902 (2004).
6. Guo, F., Nimmanapalli, R., Paranawithana, S., *et al.* Ectopic overexpression of second mitochondria-derived activator of caspases (Smac/DIABLO) or cotreatment with N-terminus of Smac/DIABLO peptide potentiates epothilone B derivative-(BMS 247550) and Apo-2L/TRAIL-induced apoptosis. *Blood* **99(9)**, 3419-3426 (2002).

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