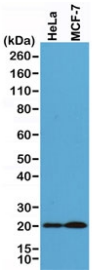
Recombinant Smac Antibody [clone RM271] (R20288)

Catalog No.	Formulation	Size
R20288-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

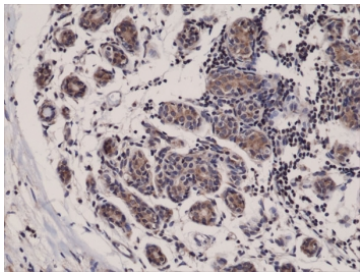
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM271
Purity	Protein A purified from animal origin-free supernatant
UniProt	Q9NR28
Gene ID	56616
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 1:500-1:1000 (1) Western Blot : 1:1000-1:2000
Limitations	This recombinant Smac antibody is available for research use only.



Western blot of human HeLa and MCF7 cell lysate using recombinant Smac antibody at 1:1000. Predicted molecular weight: 21~27 kDa.



IHC testing of FFPE human breast cancer tissue with recombinant Smac antibody at 1:1000.

Description

The Recombinant Smac antibody is a recombinant reagent engineered to detect Smac, also known as Diablo, a mitochondrial protein that promotes apoptosis by antagonizing inhibitor of apoptosis proteins (IAPs). Smac is synthesized as a precursor that localizes to the mitochondrial intermembrane space. Upon apoptotic stimulation, it is released into the cytosol, where it binds IAPs such as XIAP, c-IAP1, and c-IAP2, neutralizing their ability to inhibit caspases. By promoting caspase activation, Smac acts as a critical regulator of programmed cell death. The Recombinant Smac antibody provides reliable detection of this pro-apoptotic protein in multiple experimental settings.

Smac/Diablo is encoded by the DIABLO gene on chromosome 12q24. Structurally, it contains an N-terminal mitochondrial targeting sequence that is cleaved upon import, leaving the mature form capable of interacting with IAPs. The exposed N-terminal tetrapeptide motif (AVPI) is essential for IAP binding. Through this interaction, Smac ensures that effector caspases such as caspase-3 and caspase-7 remain active during apoptosis. The Recombinant Smac antibody enables researchers to track expression and release of Diablo during apoptotic signaling.

In western blotting, the Recombinant Smac antibody detects precursor and mature forms of the protein, allowing researchers to monitor mitochondrial processing and cytosolic release. In immunofluorescence, it reveals mitochondrial localization under basal conditions and redistribution to the cytoplasm following apoptotic stimuli. In immunohistochemistry, the antibody highlights Smac expression in tissues, supporting studies of apoptosis in development, cancer, and neurodegeneration. Recombinant design ensures consistent specificity and batch-to-batch reproducibility, reducing variability compared with hybridoma-derived antibodies.

The Recombinant Smac antibody is especially useful in cancer research, where evasion of apoptosis is a hallmark of tumor cells. Therapeutic strategies aimed at restoring apoptosis frequently target IAPs, and Smac mimetics are under clinical investigation as anticancer drugs. Detecting Smac expression with this antibody provides a means to evaluate apoptotic capacity and to monitor responses to pro-apoptotic therapies. In neuroscience, the antibody is applied to study neuronal apoptosis in models of stroke and neurodegenerative disease. Synonym terms such as recombinant Diablo antibody, recombinant DIABLO antibody, and recombinant mitochondrial Smac antibody improve accessibility for researchers using alternate nomenclature.

By providing validated and reproducible detection, the Recombinant Smac antibody supports investigations into apoptosis regulation and therapeutic development. NSJ Bioreagents supplies this antibody under stringent quality standards, ensuring dependable performance in western blotting, immunofluorescence, and immunohistochemistry. With specificity for Smac/Diablo, the Recombinant Smac antibody is an indispensable tool for advancing studies in apoptosis, oncology, and cell death pathways.

Application Notes

The stated application concentrations are suggested starting points. Titration of the recombinant Smac antibody may be required due to differences in protocols and secondary/substrate sensitivity.

1. A pH6 Citrate buffer or pH9 Tris/EDTA buffer HIER step is recommended for testing of FFPE tissue sections.

Immunogen

A peptide corresponding to the C-terminus of human Smac/Diablo was used as the immunogen for this recombinant Smac antibody.

Storage

Store the recombinant Smac antibody at -20oC (with glycerol) or aliquot and store at -20oC (without glycerol).