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SUMO1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP1222a

Specification

SUMO1 Antibody (C-term) - Product Information

Application	**FC, IHC-P, WB,E**
Primary Accession	P63165
Other Accession	Q5I0H3, A7WLH8, P63166, Q5E9D1
Reactivity	**Human**
Predicted	**Bovine, Mouse, Pig, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**55-86**

SUMO1 Antibody (C-term) - Additional Information

Gene ID 7341

Other Names
Small ubiquitin-related modifier 1, SUMO-1, GAP-modifying protein 1, GMP1, SMT3 homolog 3, Sentrin, Ubiquitin-homology domain protein PIC1, Ubiquitin-like protein SMT3C, Smt3C, Ubiquitin-like protein UBL1, SUMO1, SMT3C, SMT3H3, UBL1

Target/Specificity
This SUMO1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 55-86 amino acids from the C-terminal region of human SUMO1.

Dilution
FC~~1:10~50
IHC-P~~1:50~100
WB~~1:1000
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
SUMO1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

SUMO1 Antibody (C-term) - Protein Information

Name SUMO1

Synonyms SMT3C, SMT3H3, UBL1

Function Ubiquitin-like protein that can be covalently attached to proteins as a monomer or a lysine-linked polymer. Covalent attachment via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by E3 ligases such as PIAS1-4, RANBP2 or CBX4. This post- translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Involved for instance in targeting RANGAP1 to the nuclear pore complex protein RANBP2. Covalently attached to the voltage-gated potassium channel KCNB1; this modulates the gating characteristics of KCNB1 (PubMed:19223394). Polymeric SUMO1 chains are also susceptible to polyubiquitination which functions as a signal for proteasomal degradation of modified proteins. May also regulate a network of genes involved in palate development. Covalently attached to ZFHX3 (PubMed:24651376).

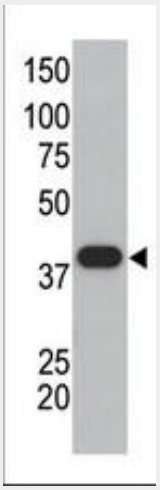
Cellular Location
Nucleus membrane. Nucleus speckle {ECO:0000250|UniProtKB:P63166}. Cytoplasm. Nucleus, PML body. Cell membrane. Nucleus. Note=Recruited by BCL11A into the nuclear body (By similarity). In the presence of ZFHX3, sequesterd to nuclear body (NB)-like dots in the nucleus some of which overlap or closely associate with PML body (PubMed:24651376) {ECO:0000250|UniProtKB:P63166, ECO:0000269|PubMed:24651376}

SUMO1 Antibody (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SUMO1 Antibody (C-term) - Images



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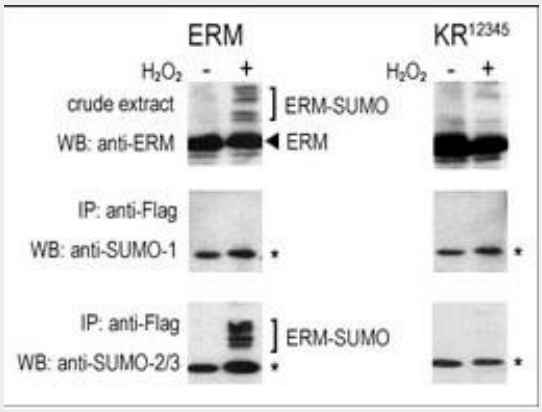
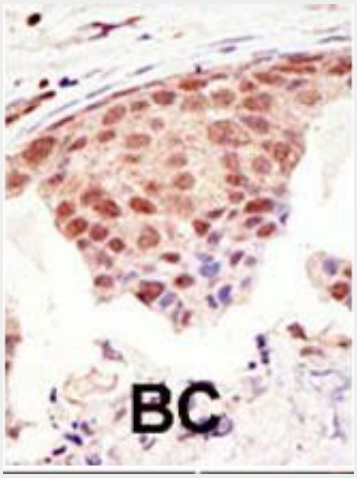
The anti-SUMO1 polyclonal antibody (Cat. #AP1222a) is used in Western blot to detect GST-SUMO1 fusion protein.



COS-7 cells were transfected for 24 hrs with a plasmid expressing FLAG-ERM (left panels) or FLAG-ERM KR12345 (right panels). Untreated (-) and H2O2-treated (+) cells were collected for immunoblot analysis. Top panels: cell lysates probed by western blot (WB) with an anti-ERM antibody. Center panels: cell lysates immunoprecipitated (IP) with an anti-FLAG antibody followed by WB with AP1222a SUMO-1 antibody. Bottom panels: cell lysates immunoprecipitated with an anti-FLAG antibody followed by WB with AP1224a SUMO-2/3 antibody. (*) represents immunoprecipitated ERM-like forms recognized by anti-SUMO antibodies.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

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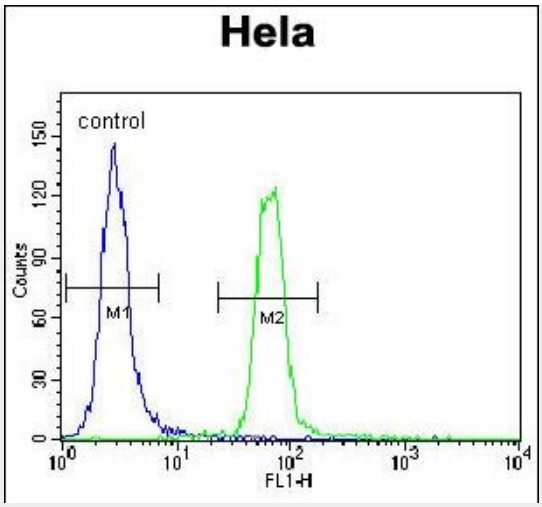

SUMO1 Antibody (C-term) (Cat. #AP1222a) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

SUMO1 Antibody (C-term) - Background

Covalent modification of target lysines by SUMO (small ubiquitin-like modifier) modulates processes such as protein localization, transcription, nuclear transport, mitosis, DNA replication and repair, signal transduction, and viral reproduction. SUMO does not seem to be involved in protein degradation and may in fact function as an antagonist of ubiquitin in the degradation process. The SUMO family consists of SUMO1 and closely related homologs SUMO2, SUMO3, and SUMO4. Sumoylation has been shown to regulate a wide range of proteins, including MDM2, PIAS, PML, RanGAP1, RanBP2, p53, p73, HIPK2, TEL, c-Jun, Fas, Daxx, TNFRI, Topo-I, Topo-II, PARK2, WRN, Sp100, IkB-alpha, Androgen receptor (AR), GLUT1/4, CaMK, DNMT3B, TDG, HIF1A, CHD3, EXOSC9, RAD51, and viral targets such as CMV-IE1/2, EBV-BZLF1, and HPV/BPV-E1.

SUMO1 Antibody (C-term) - References

Yang, S.H., et al., Mol. Cell 13(4):611-617 (2004). Bailey, D., et al., J. Biol. Chem. 279(1):692-703 (2004). Ling, Y., et al., Nucleic Acids Res. 32(2):598-610 (2004). Pountney, D.L., et al., Exp. Neurol. 184(1):436-446 (2003). Ohshima, T., et al., J. Biol. Chem. 278(51):50833-50842 (2003).

SUMO1 Antibody (C-term) - Citations

- Identifications of SUMO-1 cDNA and its expression patterns in Pacific white shrimp Litopeanaeus vannamei.
- Transition from a nucleosome-based to a protamine-based chromatin configuration during spermiogenesis in Drosophila.
- SUMO modification of the Ets-related transcription factor ERM inhibits its transcriptional activity.