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# Pan SUMO Antibody
**Purified Rabbit Polyclonal Antibody (Pab)**
**Catalog # AP1290a**

## Specification

### Pan SUMO Antibody - Product Information

| | |
|---|---|
| Application | **IHC-P, WB, IF,E** |
| Primary Accession | P55854 |
| Reactivity | **Human, Rat** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Isotype | **Rabbit IgG** |

### Pan SUMO Antibody - Additional Information

**Gene ID** 6612

**Other Names**
Small ubiquitin-related modifier 3, SUMO-3, SMT3 homolog 1 {ECO:0000312|HGNC:HGNC:11124}, SUMO-2, Ubiquitin-like protein SMT3A, Smt3A, SUMO3 (<a href="http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=11124" target="_blank">HGNC:11124</a>)

**Target/Specificity**
"This Pan SUMO antibody recognizes SUMO2 and SUMO3. This antibody is generated from rabbits immunized with a recombinant protein encoding full length human SUMO3."

**Dilution**
IHC-P~~1:100
WB~~1:1000
IF~~1:10~50
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**
Pan SUMO Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### Pan SUMO Antibody - Protein Information

**Name** SUMO3 (HGNC:11124)

**Function** Ubiquitin-like protein which can be covalently attached to target lysines either as a monomer or as a lysine-linked polymer. Does not seem to be involved in protein degradation and may function as an antagonist of ubiquitin in the degradation process. Plays a role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Covalent attachment to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by an E3 ligase such as PIAS1-4, RANBP2 or CBX4 (PubMed:11451954, PubMed:18538659, PubMed:21965678). Plays a role in the regulation of sumoylation status of SETX (PubMed:24105744).

**Cellular Location**
Cytoplasm. Nucleus. Nucleus, PML body

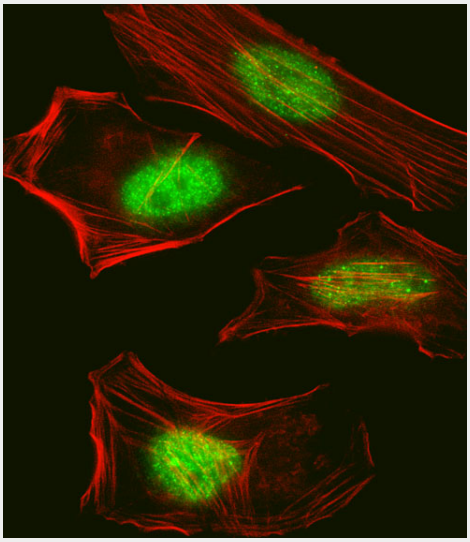
**Tissue Location**
Expressed predominantly in liver.

## Pan SUMO Antibody - 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

## Pan SUMO Antibody - Images



Fluorescent confocal image of Hela cell stained with Pan SUMO Antibody(Cat#AP1290a).Hela cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with Pan SUMO primary antibody (1:25, 1 h at 37℃). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37℃).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37℃). Nuclei were counterstained with DAPI (blue) (10 μg/ml, 10 min).Pan SUMO immunoreactivity is localized to Nucleus significantly.

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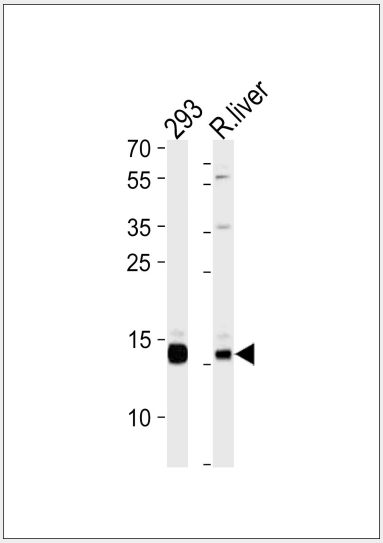
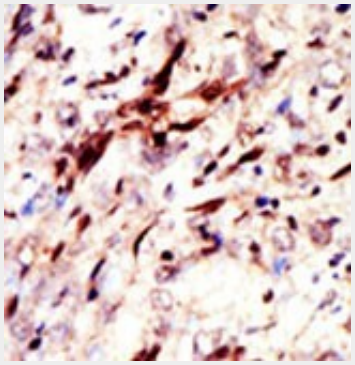
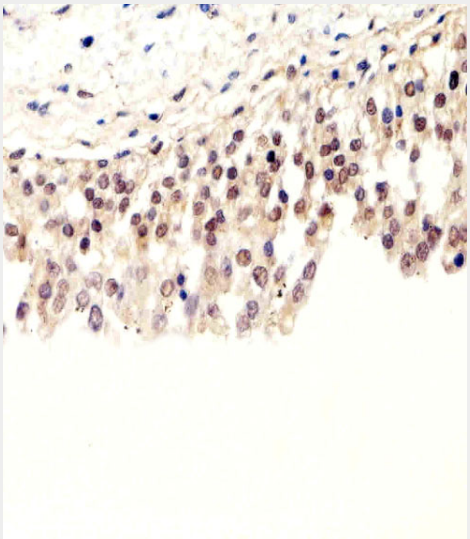



SUMO3 Antibody (Cat. #AP1290a) western blot analysis in 293 cell line and rat liver tissue lysates (35ug/lane).This demonstrates the SUMO3 antibody detected the SUMO3 protein (arrow).



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



Immunohistochemical analysis of paraffin-embedded H.bladder section using Pan SUMO Antibody(Cat#AP1290a). AP1290a was diluted at 1:100 dilution. A peroxidase-conjugated goat

anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.

**Pan SUMO Antibody - 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.

**Pan SUMO Antibody - 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).
Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).
Lapenta, V., et al., Genomics 40(2):362-366 (1997).

**Pan SUMO Antibody - Citations**

- SUMO2/3 modification of activating transcription factor 5 (ATF5) controls its dynamic translocation at the centrosome.
- Ehrlichia chaffeensis Exploits Host SUMOylation Pathways To Mediate Effector-Host Interactions and Promote Intracellular Survival.
- Poly-small ubiquitin-like modifier (PolySUMO)-binding proteins identified through a string search.
- Generation and nuclear translocation of sumoylated transmembrane fragment of cell adhesion molecule L1.