10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Sumo Antibody

Catalog # ASC10473

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P63165
Other Accession	AAH66306, 42490984
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	11557
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Sumo antibody can be used for detection of sumo by Western blot at 0.5 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	7341
Other Names	Sumo Antibody: DAP1, GMP1, PIC1, SMT3, UBL1, OFC10, SENP2, SMT3C, SMT3H3, OK/SW-cl.43, Small ubiquitin-related modifier 1, GAP-modifying protein 1, SUMO-1, SMT3 suppressor of mif two 3 homolog 1 (S. cerevisiae)
Target/Specificity	SUMO1;
Reconstitution & Storage	Sumo antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	Sumo Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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}

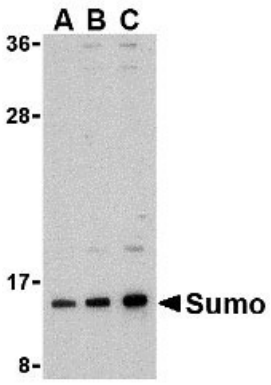
Background

Sumo Antibody: The sumo family of proteins is related both structurally and functionally to ubiquitin in that they are post-translationally attached to the e-amino group of a lysine residue of the substrate protein. This sumoylation plays a number of roles in DNA replication and repair, protein targeting to various subnuclear structures, and the regulation of numerous cellular processes including the inflammatory response in mammalian cells. Sumo was initially identified as a covalent modification of RanGAP1 in studies on nuclear import in mammalian cells. More recently, sumo has been shown to be involved in the regulation of transcription factors, possibly by enhancing their interactions with co-repressors. Sumo is also thought to play some role in the modulation of ubiquitin-mediated degradation of proteins by acting as an inhibitor. At least four different isoforms of sumo are known to exist; Sumo antibody will only recognize isoform 1.

References

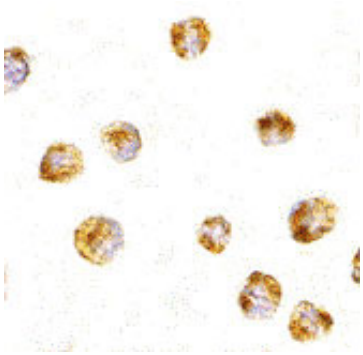
Dohmen RJ. Sumo protein modification. Biochim. Biophys. Acta 2004; 1695:113-31.
Matunis MJ, Coutavas E, and Blobel G. A novel ubiquitin-like modification modulates the partitioning of the Ran-GTPase-activating protein RanGAP1 between the cytosol and the nuclear pore complex. J. Cell Biol. 1996; 135:1457-70.
Gill G. Something about SUMO inhibits transcription. Curr. Opin. Genet. Dev. 2005; 15:536-41.
Desterro JM, Rodriguez MS, and Hay RT. SUMO-1 modification of IkappaBalpha inhibits NFkappaB activation. Mol. Cell 1998; 2:233-9.

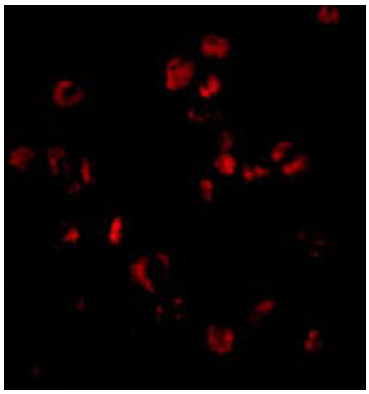
Images



Western blot analysis of sumo in HL-60 cell lysate with sumo antibody at (A) 0.5, (B) 1, and (C) 2 µg/mL.

Immunocytochemistry of Sumo in HL60 cells with Sumo antibody at 5 µg/mL.





Immunofluorescence of Sumo in HL60 cells with Sumo antibody at 20 µg/mL.