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Anti-SUMO (RABBIT) Antibody
SUMO Antibody
Catalog # ASR4396

Specification

Anti-SUMO (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human**
Clonality	**Polyclonal**
Application	**WB, E, I, LCI**
Application Note	**This purified polyclonal antibody reacts with human SUMO by western blot and ELISA. Although not tested, this antibody is likely functional in immunohistochemistry and immunoprecipitation. This antibody using the specified conditions may recognize other prominent intrinsic bands (UBLs or conjugates). Other intrinsic bands are readily detectable at lower dilutions. For immunoblotting a 1:2,000 dilution is recommended. An 11.6 kDa band corresponding to human SUMO is detected. Most human cell lysates can be used as a positive control without induction or stimulation. For ELISA a 1:4,000 to 1:20,000 dilution is recommended. Researchers should determine optimal titers for other applications.**
Physical State	**Lyophilized**
Buffer	**0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2**
Immunogen	**This purified antibody was prepared from rabbit serum after repeated immunizations with recombinant human SUMO protein.**
Reconstitution Volume	**100 µL**
Reconstitution Buffer	**Restore with deionized water (or equivalent)**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-SUMO (RABBIT) Antibody - Additional Information

Gene ID 7341

Other Names
7341

Purity
This product is an IgG fraction antibody purified from monospecific antiserum by a multi-step process which includes delipidation, salt fractionation and ion exchange chromatography followed by extensive dialysis against the buffer stated above. Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-Rabbit Serum.

Storage Condition
Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

Precautions Note
This product is for research use only and is not intended for therapeutic or diagnostic applications.

Anti-SUMO (RABBIT) Antibody - 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}

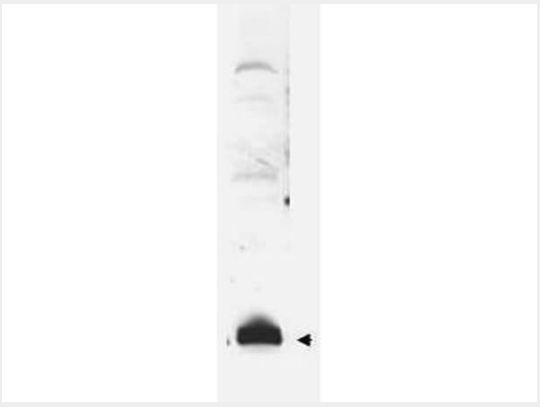
Anti-SUMO (RABBIT) Antibody - Protocols

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

Anti-SUMO (RABBIT) Antibody - Images



Western blot of hSUMO fusion protein. Anti-SUMO antibody, generated by immunization with recombinant human SUMO, was tested by western blot against a SUMO-GFP fusion protein after cleavage by proteases. Dilution of the antibody between 1:1,000 and 1:5,000 showed strong reactivity specifically with the SUMO portion of the fusion protein ~11.5kDa (arrowhead). In this blot the antibody was used at a 1:2000 dilution incubated overnight at 4° C in 5% BLOTTO (p/n B501-0500) in TTBS. Detection occurred using a 1:2000 dilution of HRP-labeled Donkey anti-Rabbit IgG (p/n 611-703-127) for 1 hour at room temperature. A chemiluminescence system was used for signal detection (Roche). Other detection systems will yield similar results. Data contributed by M. Malakhov, www.lifesensors.com, personal communication.

Anti-SUMO (RABBIT) Antibody - Background

Covalent modification of cellular proteins by the ubiquitin-like modifier SUMO (small ubiquitin-like modifier) regulates various cellular processes, such as nuclear transport, signal transduction, stress responses and cell cycle progression. But, in contrast to ubiquination, sumoylation does not tag proteins for degradation by the 26S proteasome, but rather seems to enhance stability or modulate their subcellular compartmentalization. Ubiquitin-like proteins fall into two classes: the first class, ubiquitin-like modifiers (UBLs) function as modifiers in a manner analogous to that of ubiquitin. Examples of UBLs are SUMO, Rub1 (also called Nedd8), Apg8 and Apg12. Proteins of the second class include parkin, RAD23 and DSK2, are designated ubiquitin-domain proteins (UDPs). These proteins contain domains that are related to ubiquitin but are otherwise unrelated to each other. In contrast to UBLs, UDPs are not conjugated to other proteins. Once covalently attached to cellular targets, SUMO regulates protein:protein and protein:DNA interactions, as well as localization and stability of the target protein. Sumoylation occurs in most eukaryotic systems, and SUMO is highly conserved from yeast to humans. Where invertebrates have only a single SUMO gene termed SMT3, three members of the SUMO family have been identified in vertebrates: SUMO-1 and the close homologues SUMO-2 and SUMO-3. SUMO has been called SMT3 (yeast), sentrin, PIC1, GMP1 and UBL1. SUMO has been shown to bind and regulate mammalian SP-RINGs (such as Mdm2, PIAS and PML), RanGAP1, RanBP2, p53, p73, HIPK2, TEL, c-Jun, Fas, Daxx, TNFRI, Topo-I, Topo-II, WRN, Sp100, IkB-a, Androgen receptor (AR), GLUT1/4, Drosophila Ttk69, Dorsal, CaMK, yeast Septins, and viral CMV-IE1/2, EBV-BZLF1, HPV/BPV-E1. These bindings implicate SUMO in the stabilization of the target proteins and/or their localization to subcellular complexes. SUMO has an apparent molecular weight of ~12kDa and human SUMO-1 (a 101 amino acid polypeptide) shares 50% sequence identity with SUMO-2 and SUMO-3 and with yeast SMT3. SUMO and ubiquitin only show about 18% homology, but both possess a common three-dimensional structure characterized by a tightly packed globular fold with b-sheets wrapped around an a-helix.