Datasheet for ABIN107152

anti-SUMO1 antibody

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Overview

Quantity:	500 µg
Target:	SUMO1
Reactivity:	Human
Host:	Rabbit
Clonality:	Polyclonal
Conjugate:	This SUMO1 antibody is un-conjugated
Application:	Western Blotting (WB), ELISA

Product Details

Purpose:	SUMO Antibody
Immunogen:	Immunogen: This purified antibody was prepared from rabbit serum after repeated immunizations with recombinant human SUMO protein. Immunogen Type: Recombinant Protein
Isotype:	IgG
Cross-Reactivity (Details):	Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-Rabbit Serum.
Characteristics:	Synonyms: rabbit anti-SUMO antibody, GAP modifying protein 1 antibody, GMP 1 antibody, GMP1 antibody, PIC 1 antibody, PIC1 antibody, SENP2 antibody, Sentrin 1 antibody, Sentrin antibody, Small ubiquitin related modifier 1 antibody
Purification:	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.

Target Details

Target:	SUMO1
Alternative Name:	SUMO1 (SUMO1 Products)
Background:	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 ~12 kDa 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.
Gene ID:	7341
NCBI Accession:	NP_001005781
UniProt:	P63165
Pathways:	M Phase, Positive Regulation of Endopeptidase Activity, Protein targeting to Nucleus, Ubiquitin Proteasome Pathway

Application Details

Application Notes:	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. Western Blot Dilution: 1:500 - 1:3,000 ELISA Dilution: 1:5,000 - 1:25,000 Other: User Optimized
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Reconstitution:	Reconstitution Volume: 100 µL Reconstitution Buffer: Restore with deionized water (or equivalent)
Concentration:	5.0 mg/mL
Buffer:	Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 Stabilizer: None Preservative: 0.01 % (w/v) Sodium Azide
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	4 °C,-20 °C
Storage Comment:	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.
Expiry Date:	12 months

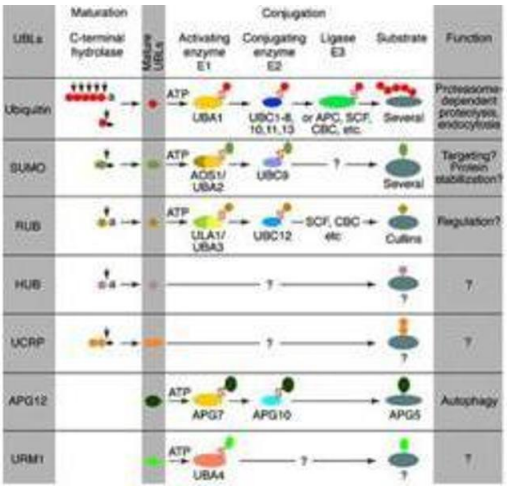
Publications

Product cited in: Meyer, Shah, Zhang, Rohrs, Rao: "Evidence for intermolecular interactions between the intracellular domains of the arabidopsis receptor-like kinase ACR4, its homologs and the Wox5 transcription factor." in: **PLoS ONE**, Vol. 10, Issue 3, pp. e0118861, (2016) (PubMed).

Images

Western Blotting

Image 1. 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 (arrowhead). In this blot the antibody was used at a 1:2000 dilution incubated overnight at 4° C in 5% non-fat dry milk in TTBS. Detection occurred using a 1:2000 dilution of HRP-labeled Donkey anti-Rabbit IgG (code # 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.



Western Blotting

Image 2. Immunoblot of hSUMO fusion protein. Anti-SUMO antibody, generated by immunization with recombinant human SUMO, was tested by immunoblot 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 (arrowhead). In this blot the antibody was used at a 1:2000 dilution incubated overnight at 4