Datasheet for ABIN107153

anti-SUMO1 antibody

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Overview

Quantity:	500 µg
Target:	SUMO1
Reactivity:	Saccharomyces cerevisiae
Host:	Rabbit
Clonality:	Polyclonal
Application:	Western Blotting (WB), ELISA, Immunoprecipitation (IP), Chromatin Immunoprecipitation (ChIP)

Product Details

Purpose:	SUMO Antibody
Immunogen:	Immunogen: This purified antibody was prepared from rabbit serum after repeated immunizations with recombinant yeast 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, Ubiquitin-like protein SMT3 antibody, SMT3 antibody, Ubiquitin like protein of the SUMO family antibody, SMT3_YEAST antibody, DmSUMO 1 antibody
Purification:	Anti-Sumo Antibody 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:	SMT3 (SUMO1 Products)
Background:	Background: Anti SUMO Antibody recognizes SUMO. 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:	852122, 6320718
UniProt:	Q12306
Pathways:	M Phase, Positive Regulation of Endopeptidase Activity, Protein targeting to Nucleus, Ubiquitin Proteasome Pathway

Application Details

Application Notes:	Application Note: Rabbit Anti-Sumo antibody reacts yeast SUMO tested by western blot and ELISA. Although not tested, this antibody is likely functional in immunohistochemistry and immunoprecipitation. For immunoblotting a 1:1,000 dilution is recommended. A 12 kDa band corresponding to yeast SUMO is detected. Most yeast cell lysates can be used as a positive control without induction or stimulation. For ELISA a 1:1,000 to 1:5,000 dilution is recommended. Researchers should determine optimal titers for other applications. ChIP Dilution: User Optimized Western Blot Dilution: 1:500 - 1:3,000 Immunoprecipitation Dilution: User Optimized ELISA Dilution: 1:5,000 - 1:25,000 Other: User Optimized
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Reconstitution:	Reconstitution Volume: 500 µL Reconstitution Buffer: Restore with deionized water (or equivalent)
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:	Greenlee, Alonso, Rahman, Meednu, Davis, Tabb, Cook, Miller: "The TOG protein Stu2/XMAP215

interacts covalently and noncovalently with SUMO." in: **Cytoskeleton (Hoboken, N.J.)**, Vol. 75, Issue 7, pp. 290-306, (2018) (PubMed).

Kramarz, Mucha, Litwin, Barg-Wojas, Wysocki, Dziadkowiec: "DNA Damage Tolerance Pathway Choice Through Uls1 Modulation of Srs2 SUMOylation in Saccharomyces cerevisiae." in: **Genetics**, Vol. 206, Issue 1, pp. 513-525, (2017) (PubMed).

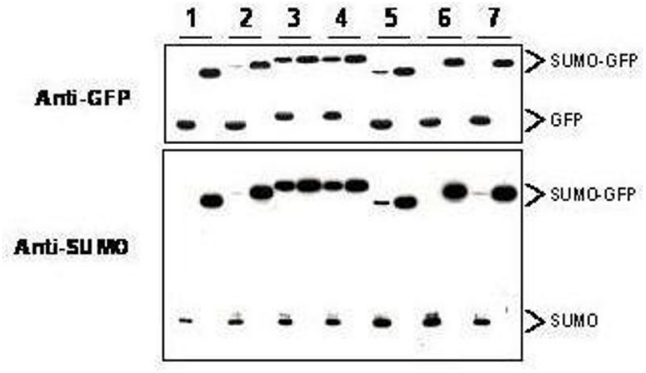
Meyer, Shah, Zhang, Rohrs, Rao: "Evidence for intermolecular interactions between the intracellular domains of the arabidopsis receptor-like kinase ACR4, its homologs and the Wox5 transcription factor." in: **PLoS ONE**, Vol. 10, Issue 3, pp. e0118861, (2016) (PubMed).

Sung, Lim, Yi, Chang, Yang, Lee, Huh: "Genome-wide bimolecular fluorescence complementation analysis of SUMO interactome in yeast." in: **Genome research**, Vol. 23, Issue 4, pp. 736-46, (2013) (PubMed).

Trujillo, Tyler, Ye, Berger, Osley: "A genetic and molecular toolbox for analyzing histone ubiquitylation and sumoylation in yeast." in: **Methods (San Diego, Calif.)**, Vol. 54, Issue 3, pp. 296-303, (2011) (PubMed).

There are more publications referencing this product on: Product page

Images



Western Blotting

Image 1. Western blot of SUMO-GFP fusion proteins cleaved by insect cell protein extracts. Anti-SUMO antibody, generated by immunization with recombinant yeast SUMO, was tested by western blot against several constructs of SUMO-GFP fusion proteins after cleavage by proteases in insect cell protein extracts. These constructs contained various linkers between the SUMO and GFP portion of the fusion proteins. Each sample was run twice. The left lanes each contain 2 ug E.coli expressed and purified SUMO-GFP fusion proteins after incubation with lysed cells (50 ug total protein) for 1 h. The right lanes contain the same fusion

proteins incubated with the lysate in the presence of 2% SDS. After probing with anti-GFP antibodies the membranes were stripped of antibody using SDS-DTT solution for 30 m at 60° C and were then re-probed using the anti-SUMO antibody at a 1:1000 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.