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Product datasheet for R1198

Sumo 1 (SUMO1) Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	ELISA, WB
Recommended Dilution:	Suitable for Western blot (Immunoblotting: 1/1,000) and ELISA (1/1,000-1/5,000). This antibody is likely functional in Immunohistochemistry and Immunoprecipitation (not tested). 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.
Reactivity:	Yeast
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Recombinant yeast SUMO protein.
Specificity:	Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-Rabbit Serum. This purified polyclonal antibody reacts Yeast SUMO by western blot and ELISA.
Formulation:	0.02M Potassium Phosphate, 0.15M Sodium Chloride, pH 7.2 with 0.01% (w/v) Sodium Azide as preservative State: Purified State: Lyophilized purified IgG fraction
Reconstitution Method:	Restore with 0.5 ml of deionized water (or equivalent).
Concentration:	lot specific
Purification:	Multi-step process which includes delipidation, salt fractionation and ion exchange chromatography followed by extensive dialysis
Conjugation:	Unconjugated
Storage:	Store vial at 2-8°C prior to restoration. For extended storage add glycerol to 50% and then aliquot contents and freeze at -20°C or below. Centrifuge product if not completely clear after standing at room temperature. This antibody is stable for one month at 2-8°C as an undiluted liquid. Dilute only prior to immediate use. Avoid repeated freezing and thawing.
Stability:	Shelf life: One year from despatch.
Gene Name:	small ubiquitin-like modifier 1

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Database Link: P63165

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, IκB-α, 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 beta-sheets wrapped around an alpha-helix.

Synonyms: SMT3C, SMT3H3, UBL1, GMP1, SMT3 homolog 3, Sentrin

Product images:

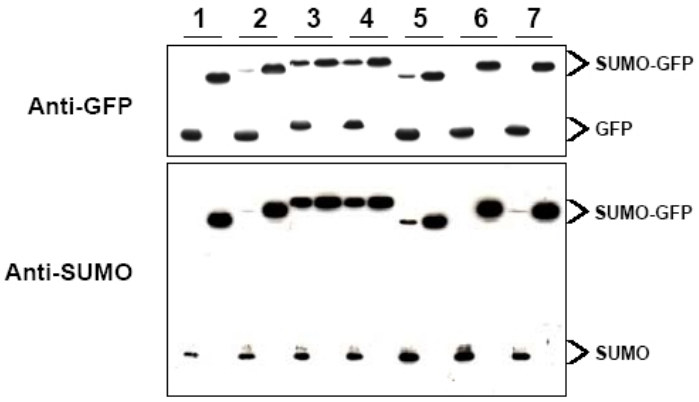

Figure. Immunoblot of SUMO-GFP fusion proteins cleaved by insect cell protein extracts. SUMO antibody is generated by immunization with recombinant Yeast SUMO, was tested by Immunoblot against several constructs of SUMO-GFP fusion proteins after cleavage by proteases in insect cell protein extracts. 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 mn at 60°C and were then re-probed using the 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 for 1 h at RT. A chemiluminescence system was used for signal detection (Roche). Other detection systems will yield similar results.