SANTA CRUZ BIOTECHNOLOGY, INC.

SUMO-1 (N-19): sc-6376

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The small ubiquitin-related modifier (SUMO) proteins, which include SUMO-1, 2 and 3, belong to the ubiquitin-like protein family. Like ubiquitin, the SUMO proteins are synthesized as precursor proteins that undergo processing before conjugation to target proteins. Also, both utilize the E1, E2 and E3 cascade enzymes for conjugation. However, SUMO and ubiquitin differ with respect to targeting. Ubiquitination predominantly targets proteins for degradation, whereas sumoylation targets proteins to a variety of cellular processing, including nuclear transport, transcriptional regulation, apoptosis and protein stability. The unconjugated SUMO-1, 2 and 3 proteins are approximately in mass and localize to the nuclear membrane, nuclear bodies and cytoplasm, respectively. SUMO-1 utilizes Ubc9 for conjugation to several target proteins, which include IκBα, MDM2, p53, PML and RanGap1. SUMO-2 and -3 contribute to a greater percentage of protein modification than does SUMO-1, and unlike SUMO-1, they can form polymeric chains. In addition, SUMO-3 regulates β-Amyloid generation and may be critical in the onset or progression of Alzheimer's disease.

CHROMOSOMAL LOCATION

Genetic locus: SUMO1 (human) mapping to 2q33.1; Sumo1 (mouse) mapping to 1 C1.3.

SOURCE

SUMO-1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SUMO-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6376 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SUMO-1 (N-19) is recommended for detection of SUMO-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SUMO-1 (N-19) is also recommended for detection of SUMO-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SUMO-1 siRNA (h): sc-29498, SUMO-1 siRNA (m): sc-36574, SUMO-1 shRNA Plasmid (h): sc-29498-SH, SUMO-1 shRNA Plasmid (m): sc-36574-SH, SUMO-1 shRNA (h) Lentiviral Particles: sc-29498-V and SUMO-1 shRNA (m) Lentiviral Particles: sc-36574-V.

Molecular Weight of SUMO-1 monomer: 12 kDa.

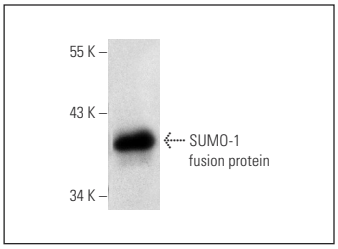
Molecular Weight of SUMO-1 heterodimer: 90 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, KNRK whole cell lysate: sc-2214 or 3611-RF whole cell lysate: sc-2215.

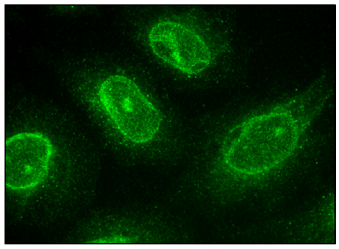
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SUMO-1 (N-19): sc-6376. Western blot analysis of human recombinant SUMO-1 fusion protein.



SUMO-1 (N-19): sc-6376. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization.

SELECT PRODUCT CITATIONS

1. Boggio, R., et al. 2004. A mechanism for inhibiting the SUMO pathway. Mol. Cell 16: 549-561.
2. Wiedlocha, A., et al. 2005. Phosphorylation-regulated nucleocytoplasmic trafficking of internalized fibroblast growth factor-1. Mol. Biol. Cell 16: 794-810.
3. Fukuda, I., et al. 2009. Kerriamycin B inhibits protein SUMOylation. J. Antibiot. 62: 221-224.
4. Gomes, R., et al. 2010. Coxsackievirus B5 induced apoptosis of HeLa cells: effects on p53 and SUMO. Virology 396: 256-263.
5. Roscioli, E., et al. 2012. Importin-β negatively regulates multiple aspects of mitosis including RANGAP1 recruitment to kinetochores. J. Cell Biol. 196: 435-450.
6. Villarroya-Beltri, C., et al. 2013. Sumoylated hnRNPA2B1 controls the sorting of miRNAs into exosomes through binding to specific motifs. Nat. Commun. 4: 2980.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.