

# SUMO-2/3 (N-18): sc-26969

## 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 localize to the nuclear membrane, nuclear bodies and cytoplasm, respectively. SUMO-1 utilizes Ubc9 for conjugation to several target proteins, which include I $\kappa$ B $\alpha$ , 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 Amyloid  $\beta$  generation and may be critical in the onset or progression of Alzheimer's disease.

## REFERENCES

1. Duprez, E., et al. 1999. SUMO-1 modification of the acute promyelocytic leukaemia protein PML: implications for nuclear localisation. *J. Cell Sci.* 112: 381-393.
2. Saitoh, H., et al. 2000. Functional heterogeneity of small ubiquitin-related protein modifiers SUMO-1 versus SUMO-2/3. *J. Biol. Chem.* 275: 6252-6258.

## CHROMOSOMAL LOCATION

Genetic locus: SUMO2 (human) mapping to 17q25.1, SUMO3 (human) mapping to 21q22.3; Sumo2 (mouse) mapping to 11 E2, Sumo3 (mouse) mapping to 10 C1.

## SOURCE

SUMO-2/3 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SUMO-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SUMO-2/3 (N-18) is available conjugated to agarose (sc-26969 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-26969 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

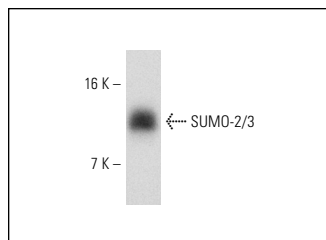
SUMO-2/3 (N-18) is recommended for detection of SUMO-2 and SUMO-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). SUMO-2/3 (N-18) is also recommended for detection of SUMO-2 and -3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SUMO-2/3 siRNA (h): sc-37167, SUMO-2/3 siRNA (m): sc-37168, SUMO-2/3 shRNA Plasmid (h): sc-37167-SH, SUMO-2/3 shRNA Plasmid (m): sc-37168-SH, SUMO-2/3 shRNA (h) Lentiviral Particles: sc-37167-V and SUMO-2/3 shRNA (m) Lentiviral Particles: sc-37168-V.

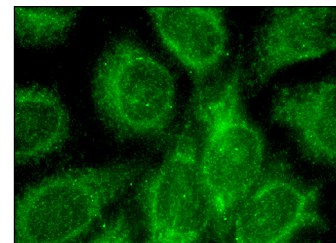
Molecular Weight of SUMO-2/3: 11-13 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or rat brain extract: sc-2392.

## DATA



SUMO-2/3 (N-18): sc-26969. Western blot analysis of SUMO-2/3 expression in rat brain tissue extract.



SUMO-2/3 (N-18): sc-26969. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Zhang, L., et al. 2007. Effects of aging and dietary restriction on ubiquitination, sumoylation, and the proteasome in the spleen. *FEBS Lett.* 581: 5543-5547.
2. Rodríguez-Muñoz, M., et al. 2007. Sumoylated RGS-RZ proteins act as scaffolds for  $\mu$ -opioid receptors and G-protein complexes in mouse brain. *Neuropsychopharmacology* 32: 842-850.
3. Han, Y., et al. 2010. SENP3-mediated de-conjugation of SUMO2/3 from promyelocytic leukemia is correlated with accelerated cell proliferation under mild oxidative stress. *J. Biol. Chem.* 285: 12906-12915.



Try **SUMO-2/3/4 (C-3): sc-393144**, our highly recommended monoclonal alternative to SUMO-2/3 (N-18). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **SUMO-2/3/4 (C-3): sc-393144**.