

Product Information

Anti-SUMO-2

produced in rabbit, affinity isolated antibody

Catalog Number **S9571**

Product Description

Anti-SUMO-2 is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 80-93 located at the C-terminal of human SUMO-2 (GeneID: 6613), conjugated to KLH. This sequence is identical in many species including rat, mouse, pig, and bovine SUMO-2 and is identical in human SUMO-3. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-SUMO-2 recognizes human SUMO-2.

Applications include immunoblotting (~15 kDa) and immunofluorescence. Staining of the SUMO-2 band in immunoblotting is specifically inhibited by the SUMO-2 immunizing peptide (human, amino acids 80-93).

The small ubiquitin-related modifier (SUMO) proteins, which include SUMO-1, -2, and -3, belong to the ubiquitin-like protein family. The post-translational modification of cellular proteins by SUMO has been implicated in multiple cellular processes, including nuclear transport, cell cycle control, oncogenesis and inflammation and the response to viral infection.¹⁻³ SUMO-1 (also known as SMT3C, SMT3H3, UBL1, PIC1, GMP1 and sentrin) is conjugated to a target protein by a pathway that is distinct from, but analogous to, ubiquitin conjugation.²⁻⁴ Like ubiquitin, SUMO-1 conjugation forms an isopeptide bond between Gly⁹⁷ at the C-terminus SUMO-1 and the ϵ -amino group on the Lys side chain of the target protein.³⁻⁵ However, unlike ubiquitin, SUMO-1 is unable to form multi-chain forms. SUMO-2 (SMT3B, SMT3H2 and sentrin-2) and SUMO-3 (SMT3A, SMT3H1 and sentrin-3), are related to SUMO-1 but are apparently functionally distinct.⁶⁻⁹ The mature forms of SUMO-2 and SUMO-3 are very similar to each other (95% sequence identity) but are relatively different from SUMO-1 (50% sequence identity), suggesting that they represent a subfamily distinct from SUMO-1. SUMO-1, -2, and -3 proteins localize to the cytoplasm, nuclear membrane and nuclear bodies. SUMO-1 and SUMO-2 are preferentially targeted to distinct sets of target proteins. SUMO-1 conjugates to several target proteins including RanGAP1, PML, Sp100, HSF1, Smad4, I κ B α , c-Jun, p53, and Mdm2.¹⁰

RanGAP1, is a major SUMO-1 substrate. SUMO-2 and SUMO-3 poorly conjugate to RanGAP1, but contribute to a greater percentage of protein modification than does SUMO-1. Unlike SUMO-1, SUMO-2 and -3 can form poly-SUMO chains.¹¹ SUMO modification has been implicated in neurodegeneration. SUMO-3 has been shown to regulate β -amyloid generation, and components of the sumoylation pathway may be critical in the onset or progression of Alzheimer's disease.¹³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~0.6 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1 μ g/mL is recommended using a nuclear extract of HeLa cells or a cell extract of HEK293-T cells transfected with human SUMO-2.

Indirect immunofluorescence: a working concentration of 10-20 μ g/mL is recommended using HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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