3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Sumo-1 antibody, Rat monoclonal
clone 4D12, purified from hybridoma cell culture

Catalog Number **SAB4200189**

Product Description

Anti-Sumo-1 (rat IgG2a isotype) is derived from the hybridoma 4D12 produced by the fusion of mouse myeloma cells (SP2/0) and splenocytes from rat immunized with a fusion protein of human SUMO1 (GeneID; 7341). The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Anti-Sumo-1 recognizes human, mouse and rat Sumo1. The product may be used in several immunochemical techniques. Specifically, it can recognize Sumo1 (~12 kDa, apparent ~17 kDa) and sumoylated proteins in immunoblotting and immunocytochemistry.

Small ubiquitin-like modifier (SUMO) was identified as a post-translational protein modifier. It functions in a manner similar to ubiquitin in that it is bound to target proteins as part of a post-translational modification system. However, unlike ubiquitin, which targets proteins for degradation, SUMOylation is involved in a variety of cellular processes, such as nuclear transport, transcriptional regulation, apoptosis, and protein stability. There are four members in the SUMO family, of which SUMO1–SUMO3 are ubiquitously expressed, whereas SUMO4 is mainly expressed in the lymph system. SUMO2 and SUMO3 are 97% identical but share only 50% sequence identity with SUMO1.[1]
It is not active until the last four amino acids of the carboxy-terminus have been cleaved off by the activating (E1), conjugating (E2) and ligating (E3) enzymes involved in SUMOylation which are entirely distinct from ubiquitin E1, E2 and E3.[2] SUMO-1 can specifically interact with dsDNA in a sequence-independent fashion. It has also been shown that SUMO-1 binding to DNA can compete with other protein-DNA interactions.[3] Interestingly, *in vivo,* SUMO1 mutants were found to be viable and without any overt phenotype. This could have been attributed to the compensatory utilization of SUMO2/3, suggesting redundancy is an important cellular strategy for maintaining sumoylation levels above critical thresholds.[4]

Reagent

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

Antibody concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at −20 °C. For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at −20 °C 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 2-4 μg/mL is recommended using HeLa cell extracts.

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

References

1. Zuo, Y., and Cheng, J.K., *Asian J. Androl.*, **11,** 36-38 (2009).
2. Lois, L.M., and Lima, C.D., *EMBO J.,* **24,** 439-451 (2005).
3. Eilebrecht, S., et al., *BMC Res. Notes,* **3,** 146 (2010).
4. Evdokimov, E., et al., *J. Cell Sci.,* **121**, 4106-4113 (2008)

RC,GG,CS,SC,PHC 04/21-1