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[Primary Antibody]

Rabbit Anti-SUMO1 antibody

Catalog Number: SL1499R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	SUMO1
Immunogen:	KLH conjugated synthetic peptide derived from human SUMO1: 21-101/101
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Rat(predicted:Human,Mouse,Chicken,Pig,Cow,Horse)
Predicted MW.:	12kDa
Subcellular Location:	The nucleus cytoplasmic The cell membrane
Background:	This gene encodes a protein that is a member of the SUMO (small ubiquitin-like modifier) protein family. 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, this protein is involved in a variety of cellular processes, such as nuclear transport, transcriptional regulation, apoptosis, and protein stability. It is not active until the last four amino acids of the carboxy-terminus have been cleaved off. Several pseudogenes have been reported for this gene. Alternate transcriptional splice variants encoding different isoforms have been characterized. [provided by RefSeq, Jul 2008] **Function:** Ubiquitin-like protein that can be covalently attached to proteins as a monomer or a lysine-linked polymer. Covalent attachment via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2

Important Note: This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

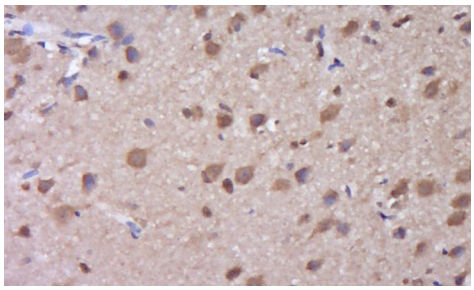
	and linkage to the E2 enzyme UBE2I, and can be promoted by E3 ligases such as PIAS1-4, RANBP2 or CBX4. This post-translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Involved for instance in targeting RANGAP1 to the nuclear pore complex protein RANBP2. Polymeric SUMO1 chains are also susceptible to polyubiquitination which functions as a signal for proteasomal degradation of modified proteins. May also regulate a network of genes involved in palate development. **Subunit:** Interacts with SAE2, UBE2I, RANBP2, PIAS1 and PIAS2. Interacts with PARK2. Covalently attached to a number of proteins such as IKFZ1, PML, RANGAP1, HIPK2, SP100, p53, p73-alpha, MDM2, JUN, DNMT3B and TDG. Also interacts with HIF1A, HIPK2, HIPK3, CHD3, EXOSC9, RAD51 and RAD52. Interacts with USP25 (via ts SIM domain); the interaction weakly sumoylates USP25. **Subcellular Location:** Nucleus membrane. Nucleus speckle. Cytoplasm. Note=Recruited by BCL11A into the nuclear body. **Post-translational modifications:** Cleavage of precursor form by SENP1 or SENP2 is necessary for function. Polymeric SUMO1 chains undergo polyubiquitination by RNF4. DISEASE: Defects in SUMO1 are the cause of non-syndromic orofacial cleft type 10 (OFC10) [MIM:613705]; also called non-syndromic cleft lip with or without cleft palate 10. OFC10 is a birth defect consisting of cleft lips with or without cleft palate. Cleft lips are associated with cleft palate in two-third of cases. A cleft lip can occur on one or both sides and range in severity from a simple notch in the upper lip to a complete opening in the lip extending into the floor of the nostril and involving the upper gum. Note=A chromosomal aberation involving SUMO1 is the cause of OFC10. Translocation t(2;8)(q33.1;q24.3). The breakpoint occurred in the SUMO1 gene and resulted in haploinsufficiency confirmed by protein assays. **Similarity:** Belongs to the ubiquitin family. SUMO subfamily. Contains 1 ubiquitin-like domain. **Database links:** **Entrez Gene:** 7341 Human **Entrez Gene:** 22218 Mouse **Entrez Gene:** 301442 Rat Omim: 601912 Human **SwissProt:** P63165 Human **SwissProt:** P63166 Mouse **SwissProt:** Q5I0H3 Rat

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	Unigene: 596171 Human **Unigene:** 81424 Human **Unigene:** 362118 Mouse **Unigene:** 1221 Rat Synthesis and Degradation（Synthesis and Degradation） SUMOModification can make proteins more stable,SUMOIts biochemical reaction pathway is similar to that of Ubiquitin,But unlike Ubiquitin, it does not induce degradation of substrate proteins, thereby regulating many key cellular activities. SUMO (small ubiquitin-related modifier) is one of the important members of the Ubiquitin (ubiqutin)-like protein family.

[VALIDATION IMAGES]



Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (SUMO 1) Polyclonal Antibody, Unconjugated (SL1499R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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