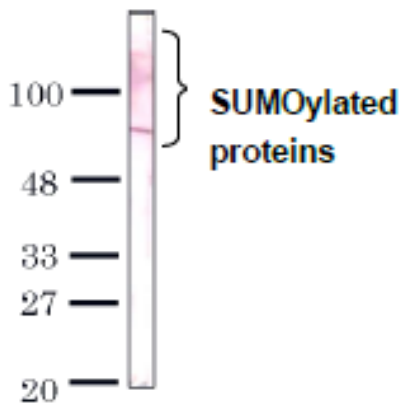


## Anti-SUMO1 antibody, rat monoclonal (4D12)

<b>Product code</b>	70-653
<b>Size</b>	100 µg
<b>Storage</b>	-20°C
<b>Concentration</b>	1.0 mg/ml
<b>Buffer</b>	PBS- with 50% glycerol
<b>Purity</b>	Purified IgG fraction with protein A from hybridoma cell culture medium.
<b>Immunogen</b>	Purified recombinant GST-fused human SUMO1 (full length)
<b>Isotype</b>	Rat IgG 2ακ
<b>Reactivity</b>	Specific to human, simian, mouse and rat SUMO1. Other species have not been tested.
<b>Special notes</b>	N/A
<b>Application</b>	1. Western blotting (1/1,000 dilution) 2. Immunofluorescence staining (1/100 dilution) 3. Immunohistochemistry, frozen section (1/100 dilution) 4. ELISA (assay dependent) Other applications have not been tested.
<b>Background</b>	SUMO (Small Ubiquitin-like Modifier) proteins are a family of small proteins that are covalently attached to and detached from other proteins in cells to modify their function. Unlike ubiquitination, which targets proteins for degradation, SUMO modification plays a critical role in a number of cellular functions including nucleocytoplasmic transport, gene expression, cell cycle and formation of subnuclear structures such as promyelocytic leukemia (PML) bodies. There are three confirmed SUMO isoforms in human; SUMO1, SUMO2 and SUMO3. SUMO2 /3 show a high degree of similarity to each other and are distinct from SUMO-1. Individual SUMO family members are all targeted to different proteins with diverse biological functions. SUMO-1 is conjugated to RanGAP, PML, p53 and IκB-α to regulate nuclear trafficking, formation of subnuclear structures, regulation of transcriptional activity and protein stability. SUMO1 is encoded as a 101 aa protein and first Met and C-terminal 4 aa are removed from the preprotein.
<b>Data Link</b>	Swiss-Prot <a href="#">P63165</a> (human)
Please note: All products are FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES. NOT FOR MILITARY USE.	

**Data Images:** 70-653 Anti-SUMO1 antibody, rat monoclonal (4D12)

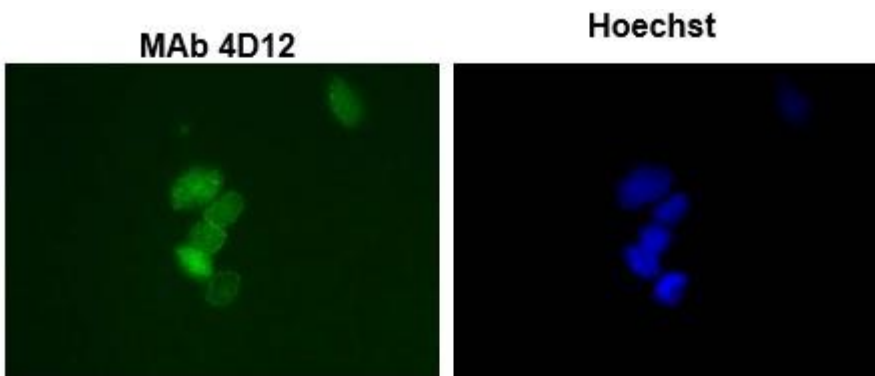


**Fig.1. Detection of SUMO-1 by Western blotting with the antibody 4D12.**

An 80 kDa single and other multiple bands were observed in HeLa total cell extract.

The 80 kDa band would be SUMO-RanGAP.

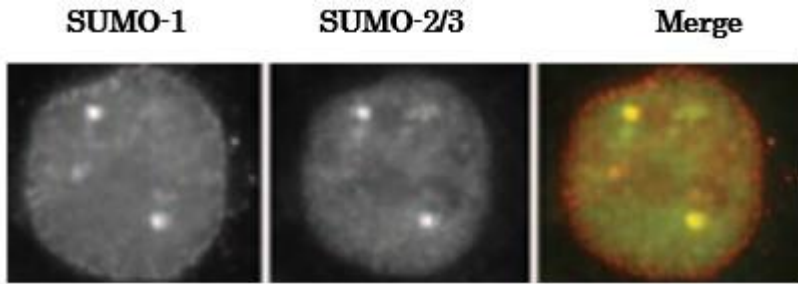
Anti-SUMO-1 antibody 4D12 was used at 1 µg/ml.



**Fig.2. Immunofluorescence staining of SUMO-1 with the antibody 4D12 in the mouse primary culture neurons.**

Left: Stained with anti-SUMO-1 antibody 4D12 at 10µg/ml.

Light: DNA was stained with Hoechst

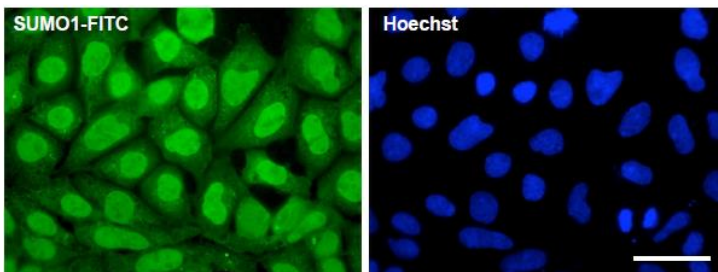


**Fig.2. SUMO-1 colocalizes with SUMO-2/3 as revealed by indirect immunofluorescence staining of C-33A cells (human cervix carcinoma).**

Left: SUMO-1 was stained with anti-SUMO-1 antibody (4D12) at 10 µg/ml

Middle: SUMO-2/3 was stained with anti-SUMO-2/3 antibody (3H12).

Right: Merged image



**Fig.4 Fluorescence immunocytochemistry for endogenous SUMO1 expression.**

HEK293A cells were fixed, permeabilized, and stained with SUMO1-FITC (1: 50) antibody and Hoechst 33342. Scale bar, 50 µm.

**References:** This antibody was used in the following publications.

1. Uchimura Y *et al* "Involvement of SUMO modification in MBD1- and MCAF1-mediated heterochromatin formation." *J Biol Chem* **281**: 23180-23190 (2006) PMID: [16757475](https://pubmed.ncbi.nlm.nih.gov/16757475/)
2. Saitoh N *et al* "In situ SUMOylation analysis reveals a modulatory role of RanBP2 in the nuclear rim and PML bodies." *Exp Cell Res* **312**: 1418-1430 (2006) PMID: [16688858](https://pubmed.ncbi.nlm.nih.gov/16688858/)