Anti-SUMO1 antibody, rat monoclonal (4D12)

70-653 **100 µg**

Storage: Shipped at 4℃ or -20℃ and store at -20℃. Do not freeze.

Reactivity: Reacts with human, simian, mouse and rat SUMO1.

Immunogen: Recombinant GST-fused human SUMO1 (full length)

Applications:

1. Western blotting (1/1,000)
2. Immunofluorescence staining (1/100 dilution)
3. Immunohistochemistry, Frozen section (1/100 dilution)
4. ELISA (assay dependent)

Isotype: Rat IgG 2a kappa

Product: The antibody was produced in serum-free medium and purified by proprietary chromatography procedures under mild conditions.

Form: 1mg/ml in PBS, 50% glycerol, filter-sterilized. Azide- and carrier protein-free.

Background: SUMO (**S**mall **U**biquitin-like **Mo**difier) 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 **SUMO1**. Individual **SUMO** family members are all targeted to different proteins with diverse biological functions. **SUMO-1** is conjugated to RanGAP, PML, p53 and I□B-□ 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.

Data Link: Swiss-Prot P63165 (human)

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
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

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.

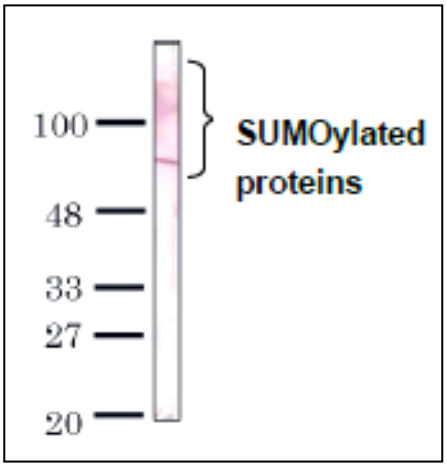

Fig.2.Immunofluorescence staining of SUMO-1 with the antibody 4D12 in the mouse primary culture neurons.
Left: Stained with anti-SUMO-1 antibody 4D12 at 10 μg/ml.
Light: DNA was stained with

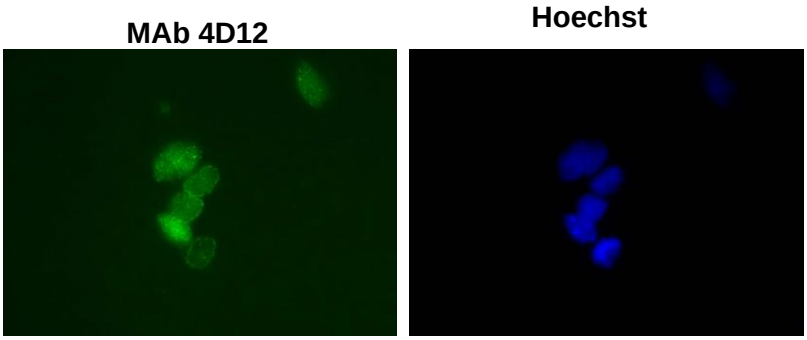

Fig.3.SUMO-1 colocalizes with SUMO2/3 as revealed by indirect immunofluorescence staing of C-33A cells (human cervix carcinoma).
Left:SUMO-1 was stained with anti-SUMO-1

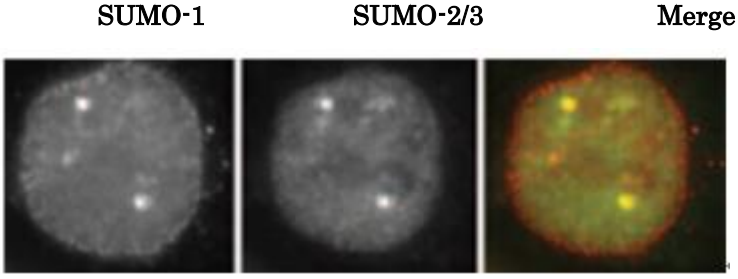

Fig.4 Fluorescence immunocytochemistry for endogenous SUMO1 expression.
HEK293A cells were fixed, permeabilized, and stained with SUMO1-FITC (1: 50) antibody and Hoechst 33342. Scale bar, 50 mm.