COSMO BIO CO., LTD.
Inspiration for Life Science

For research use only. Not for clinical diagnosis.

Catalog No. 70-654

Anti-SUMO1 antibody, rat monoclonal (4D12), Biotin-conjugated

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. **SUMO1** 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.

Applications:

1. Western blotting 2. Immunofluorescence staining 3. Immunohistochemistry 4. ELISA

Other applications have not been tested.

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

Isotype: Rat IgG 2a kappa

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

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

Specificity: Specific to human, simian, mouse and rat SUMO1. Other species have not been tested.

Size: 50 ug

Storage: Shipped at 4℃ or -20℃ and store at -20℃

Data Link: Swiss-Prot P63165 (human)

References: This antibody was used in Ref. 3 and 4.

1. Ulrich HD "The fast-growing business of SUMO chains." Review *Mol Cell* **32**: 301–305 (2008) PMID: 18995828
2. Cheng J *et al* "Role of desumoylation in the development of prostate cancer." Review *Neoplasia* **8**: 667-676 (2006) PMID: 16925949
3. Uchimura Y *et al* "Involvement of SUMO modification in MBD1- and MCAF1-mediated heterochromatin formation." *J Biol Chem* **281**: 23180-23190 (2006) PMID: 16757475

4. 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 SUMO1 by Western blotting with the antibody 4D12.**
An 80kDa single and other multiple bands were observed in HeLa total cell extract.

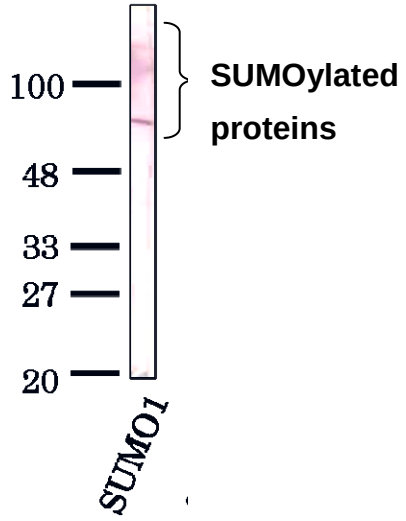


Fig.2. Immunofluorescence staining of SUMO1 with the antibody 4D12 in the mouse primary culture neurons.
Left: Stained with anti-SUMO1 antibody 4D12.
Light: DNA was stained with Hoechst

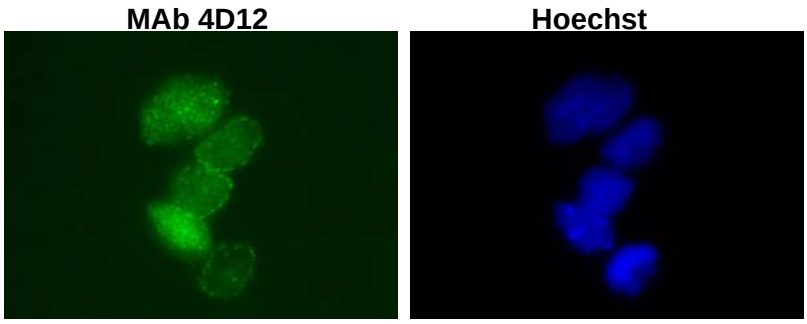
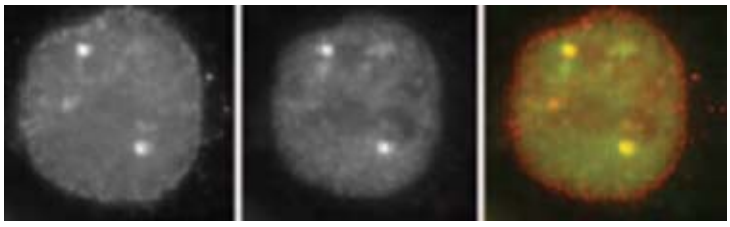


Fig.3. SUMO1 colocalizes with SUMO2/3 as revealed by indirect immunofluorescence staing of C-33A cells (human cervix carcinoma).
Left: SUMO1 was stained with anti-SUMO1 antibody (4D12)
Middle**:** SUMO2/3 was stained with anti-SUMO2/3 antibody (3H12).
Right: Merged image



For research use only. Not for clinical diagnosis.

Manufactured by BioAcademia,Inc.

COSMO BIO CO., LTD.
Inspiration for Life Science
TOYO 2CHOME, KOTO-KU, TOKYO, 135-0016, JAPAN
http://www.cosmobio.co.jp/index_e.asp E-mail: export@cosmobio.co.jp
Phone : +81-3-5632-9617 FAX : +81-3-5632-9618