

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

Catalog # 70-654 50 µg

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 and 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 IKB-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 the first Met and C-terminal 4 aa are removed from the preprotein.

Applications

1. Immunofluorescence staining 1:100 dilution
 2. Immunohistochemistry frozen section 1:100 dilution
 3. Western blot 1:1000 dilution
 4. ELISA assay dependent
- Other applications have not been tested

Specification

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

Isotype: Rat IgG 2a kappa

Form: purified monoclonal IgG antibody, 1 mg/ml in PBS, 50% glycerol, filter-sterilized.

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

Storage: Shipped at 4°C or -20°C and store at -20°C

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](#)

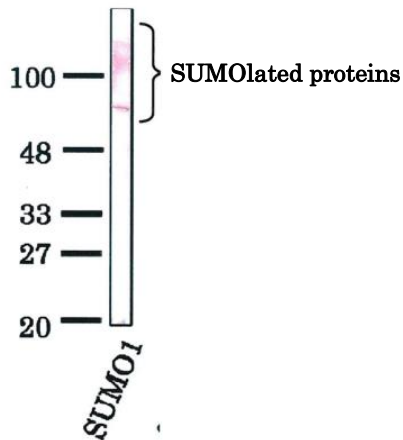


Fig 1. Detection of SUMO1 by Western Blot using antibody 4D12. An 80 kDa single and other multiple bands were observed in HeLa total cell extract.

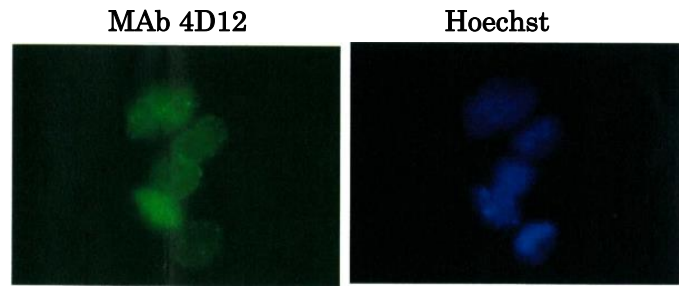


Fig 2. Immunofluorescence staining of SUMO1 with the antibody 4D12 in mouse primary culture neurons. Left: stained with anti-SUMO1 antibody 4D12. Right: DNA stained with Hoechst

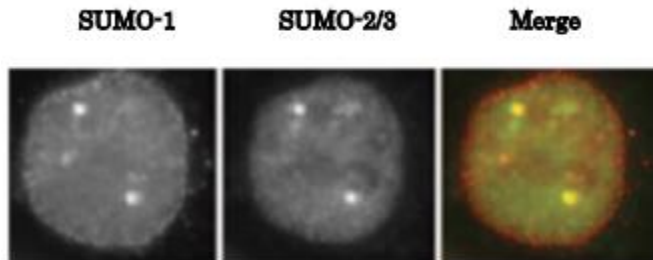


Fig 3. SUMO1 colocalizes with SUMO-2/3 as revealed by indirect immunofluorescence staining of C-33A cells (human cervix carcinoma). Left: SUMO-1 was stained with anti-SUMO1 antibody (4D12) at 10 μ g/ml. Middle: SUMO2/3 was stained with anti-SUMO2/3 antibody (3H12) at 10 μ g/ml. Right: Merged image