Bio Academia
Manufacturer

AS ONE

Anti-SUMO1 antibody, rat monoclonal (4D12)

70-653 100 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 /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.
The antibody was produced from the hybridoma cultured in serum-free medium and purified under mild conditions by propriety chromatography processes.

Applications

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

Other applications have not been tested.

Specification

Immunogen: Recombinant GST-fused human SUMO1 (full length)
Isotype: Rat IgG 2a kappa
Form: Purified monoclonal antibody (IgG) 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 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 with the antibody 4D12.
An 80kDa single and other multiple bands were observed in HeLa total cell extract.