LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
http://www.ldbiopharma.com

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human SUMO1 Protein
Catalog Number: HRP-2954
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human small ubiquitin-related modifier 1 (SUMO1) gene encodes an ubiquitin-like protein that can be covalently attached to proteins as a monomer or a lysine-linked polymer. SUMO1 can covalently attaches via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by E3 ligases such as PIAS1-4, RANBP2 or CBX4. This post-translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Involved for instance in targeting RANGAP1 to the nuclear pore complex protein RANBP2. SUMO1 covalently attached to the voltage-gated potassium channel KCNB1; this modulates the gating characteristics of KCNB1. Polymeric SUMO1 chains are also susceptible to poly-ubiquitination which functions as a signal for proteasomal degradation of modified proteins. It may also regulate a network of genes involved in palate development. SUMO1 covalently attached to ZFHX3.

Full-length human sumo-I cDNA (101aa) was constructed with codon optimization gene synthesis and expressed with a SuperGFP Protein N-terminal (sGFP; 257aa) fusion at target protein N-terminal in E.coli as highly soluble protein. The final product was chromatographically purified.

Gene Symbol:	SUMO1 (SMT3C; SMT3H3; UBL1)
Accession Number:	NP_003343
Species:	Human
Size:	50 µg / Vial
Composition:	1.0 mg/ml , in 20 mM pH 7.2 HEPES Buffer, with 200 mM NaCl, 1mM DTT, 1mM EDTA, 30% Glycerol, 0.1% Trinton X-100.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two week.

Key References

LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
http://www.ldbiopharma.com

Romo-Garcia MF, et al., ***Evaluation of SUMO1 and POU2AF1 in whole blood from rheumatoid arthritis patients and at risk relatives***. Int. J. Immunogenet. 46 (2), 59-66 (2019)

Ke C, et al., ***SUMO1 promotes the proliferation and invasion of non-small cell lung cancer cells by regulating NF-kappaB***. Thorac Cancer 10 (1), 33-40 (2019)

Harbani Kaur. et al., ***A linker strategy for Trans-FRET Assay to Determine Activation Intermediate of NEDDylation Cascade.*** Biotechnol. Bioeng. Vol.111, No.7 July, 1288-1295 (2014)

Pedelacq JD, et al,. ***Engineering & characterization of a superfolder green flurescent protein***. Nat Biotechnol. Jan: 24(1): 79-88. (2006).

Applications

1. Recombinant Human SUMO1 can be conjugated to specific substrate proteins via the subsequent actions of a SUMO-activating (E1) enzyme, a SUMO-conjugating (E2) enzyme, and a SUMO ligase (E3). Assay reaction conditions will need to be optimized for each specific application. We recommend an initial SUMO1 concentration of 50ng / well, in 50 -100ul reaction volume.

2. As native human SUMO1 immunogen for its specific antibody production.

Quality Control

Purity: > 93 % by SDS-PAGE.

Recombinant sfGFP- Human SUMO1 Protein Sequence (40.6 kD)

**MKHHHHHHQVSKGEELFTGVVPILVELDGDVNGHKFSVRGEGEGDATNGKLTLKFICTTGKLPV
PWPTLVTTLTYGVQCFSRYPDHMKRHDFFKSAMPEGYVQERTISFKDDGTYKTRAEVKFEGDTL
VNRIELKGIDFKEDGNILGHKLEYNFNSHNVYITADKQKNGIKANFKIRHNVEDGSVQLADHYQ
QNTPIGDGPVLLPDNHYLSTQSVLSKDPNEKRDHMVLLEFVTAAGITHGMDELYKSGLRSGGSG
GGEGSMSDQEAKPSTEDLGDKKEGEYIKLKVIGQDSSEIHFKVKMTTHLKKLKESYCQRQGVPM
NSLRFLFEGQRIADNHTPKELGMEEEDVIEVYQEQTGGHSTV**