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MATERIAL DATA SHEET

Recombinant Human Poly−SUMO2 Wild-type Chains (3-8)
Cat. # ULC-220

Human Small Ubiquitin-like Modifier 2 (SUMO2), also known as Sentrin2 and SMT3B is synthesized as a 95 amino acid (aa), propeptide with a predicted 11 kDa. SUMO2 contains a two aa C-terminal prosegment and an 18 aa N-terminal protein interacting region between aa 33-50. Poly-SUMO2 represents chains of wild-type recombinant human SUMO2 molecules linked via Lys11, which is the point of attachment for the C-terminal glycine residue of the preceding SUMO2 (1). SUMO2 monomers and dimers (Di-SUMO2) have been removed from the chain mixture. Human SUMO2 shares 100% aa sequence identity with mouse SUMO2. Poly-SUMO2 can be used as a substrate for SUMO-specific isopeptidases (SENPs) and DeSumoylating Isopeptidase 1 that cleave the isopeptide linkage between two SUMO2 molecules (2). It can also be used to investigate mechanisms of binding and recognition by SUMO-activating (E1) enzymes, SUMO-conjugating (E2) enzymes, SUMO ligases (E3s), and other proteins that contain SUMO binding domains. SUMOs are a family of small, related proteins that can be enzymatically attached to a target protein by a post-translational modification process termed SUMOylation (3-5). Unlike SUMO1 which is usually conjugated to proteins as a monomer, SUMO2 and SUMO3 form high molecular weight polymers on proteins. All SUMO proteins share a conserved Ubiquitin domain and a C-terminal diglycine cleavage/attachment site. Following prosegment cleavage, the C-terminal glycine residue of SUMO2 is enzymatically attached to a lysine residue on a target protein. In humans, SUMO2 is conjugated to a variety of molecules in the presence of the SAE1/UBA2 SUMO-activating (E1) enzyme and the UBE2I/Ubc9 SUMO-conjugating (E2) enzyme (6,7). In yeast, the SUMO-activating (E1) enzyme is Aos1/Uba2p (8).

Poly-SUMO-2 chains can be used to investigate mechanisms of chain recognition, binding and hydrolysis by SUMO-specific isopeptidases (SENPs), SUMO-specific E3 ligases or other proteins that contain SUMO-2 binding domains. This product is formed enzymatically with wildtype Human Recombinant SUMO-2 linked via lysine 11 which is the point of attachment for the C-terminal glycine of the preceding SUMO-2. Mono- and di-SUMO-2 have been removed from the chain mixture.

Product Information	
Quantity:	25 µg
Source:	*E. coli*-derived Accession # NM_006937
Stock:	Supplied as a solution in HEPES, NaCl and DTT.
Purity:	>95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: The function of SUMO chains is an area of intense research. K11-linked Poly-SUMO2 WT Chains (3-8) are ideal for investigating SUMO-binding proteins and as substrates for SUMO-specific proteases. Reaction conditions will need to be optimized for each specific application.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

Literature

References:

1. Bylebyl, G.R. *et al.* (2003) J. Biol. Chem. **278**:44113.
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3. Desterro, J.M. *et al*. (1997) FEBs. Lett. **417**:297.
4. Bettermann, K. *et al*. (2012) Cancer Lett. **316**:113.
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6. Okuma, T. *et al*. (1999) Biochem. Biophys. Res. Commun. **254**:693.
7. Tatham, M.H. *et al*. (2001) J. Biol. Chem. **276**:35368.
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