
MATERIAL DATA SHEET

Recombinant Human Di-SUMO3 Wild-type Chains

Cat. # ULC-300

Human Small Ubiquitin-like Modifier 3 (SUMO3), also known as SMT3A, is synthesized as a 103 amino acid (aa), propeptide with a predicted 11.5 kDa. SUMO3 contains a two aa C-terminal prosegment. Di-SUMO3 represents two wild-type recombinant human SUMO3 molecules linked via Lys11, which is the point of attachment for the C-terminal glycine residue of the preceding SUMO3 (1). Human SUMO3 shares 83% sequence identity with mouse SUMO3. Di-SUMO3 can be used as a substrate for SUMO-specific isopeptidases (SENPs) and DeSUMOylating Isopeptidase 1 that cleave the isopeptide linkage between two adjacent SUMO3 molecules (2). Di-SUMO3 can also be used to investigate mechanisms of binding and recognition by SUMO-activating (E1) enzymes, SUMO-conjugating (E2) enzymes, SUMO E3 ligases, 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 SUMO3 is enzymatically attached to a lysine residue on a target protein. In humans, SUMO3 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).

Di-SUMO-3 is a substrate for SUMO-specific isopeptidases (SENPs) that cleave the isopeptide linkage between two SUMO-3 molecules. It can also be used to investigate mechanism of binding and recognition by SUMO specific E1 or E2 enzymes, E3 ligases or other proteins that contain SUMO binding domains. This product is formed enzymatically with wild-type Human Recombinant SUMO-3 linked via lysine 11 which is the point of attachment for the C-terminal glycine of the preceding SUMO-3.

Product Information

Quantity:	50 µg
MW:	21 kDa
Source:	<i>E. coli</i> -derived human Di-SUMO3 protein Accession # NM_006936
Stock:	X mg/ml (X µM) in 50 mM HEPES pH 8.0, 100 mM NaCl, 2 mM 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 di-SUMO3 WT Chains 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:	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -70 °C as supplied. • 3 months, -70 °C under sterile conditions after opening.

Literature

References:

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6. Okuma, T. *et al.* (1999) Biochem. Biophys. Res. Commun. **254**:693.
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