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MATERIAL DATA SHEET

Recombinant Human His6-Pro SUMO3
Cat. # UL-761

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. Human SUMO3 shares 83% sequence identity with mouse SUMO3. SUMO3 also has high aa sequence homology to SUMO2 and SUMO4, 87% and 75%, respectively. SUMO3 shares only 47% sequence identity with SUMO1. 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 (1-3). 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 (4,5). In yeast, the SUMO-activating (E1) enzyme is Aos1/Uba2p (6). Because of the high level of sequence homology most studies report effects of SUMO2/3. For example, addition of SUMO2/3 was shown to modulate the function of ARHGAP21, a RhoGAP protein known to be involved in cell migration (7). Other reports indicate that the conjugation by SUMO2/3, but not SUMO1, may represent an important mechanism to protect neurons during episodes of cerebral ischemia (8,9). However, studies suggest that SUMO2/3 expression is regulated in an isoform-specific manner since oxidative stress downregulated the transcription of SUMO3 but not SUMO2 (10).

All SUMO isoforms are translated with additional C-terminal residues that have to be removed to generate the active protein. Pro-SUMO3 (103 amino acids) is the inactive precursor of SUMO3 (92 amino acids) and is processed at the C-terminus by SUMO3 specific proteases (SENPs).The resulting SUMO3 protein has the conserved C-terminal Gly-Gly residues that function in activation and conjugation reactions. This protein can be used as a negative control in SUMOlyation reactions or as a substrate for SENPs. This His-6 tag is at the N-terminus. NCBIAccession # NM_006936.

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Product Information

Quantity: 500 µg

MW: 14 kDa

Source: *E. coli*-derived human SUMO3 protein
Contains an N-terminal 6-His tag
Accession # NM_006936

Stock: X mg/ml (X µM) in 50 mM HEPES pH 8.0, 150 mM NaCl, 1mM DTT

Purity: >95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: Recombinant Human His6-Pro-SUMO3 can be used as a negative control for SUMOylation reactions, or as a substrate for Sentrin Proteases (SENPs). Protein concentration for use in vitro 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:

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