
MATERIAL DATA SHEET

Recombinant Human SUMO1 Agarose

Cat. # UL-740

Human Small Ubiquitin-like Modifier 1 (SUMO1), also known as Sentrin, UBL1, and SMT3C, is synthesized as a 101 amino acid (aa) propeptide with a predicted molecular weight of 11.5 kDa. Human SUMO1 is the most unique of the four identified SUMO proteins and shares only 44%, 47%, and 41% aa sequence identity with SUMO2, SUMO3, and SUMO4, respectively. In contrast, human SUMO1 shares 100% aa sequence identity with the mouse ortholog. 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 cleavage of a four aa C-terminal prosegment, the C-terminal glycine residue of SUMO1 is enzymatically attached to a lysine residue on a target protein. In humans, SUMO1 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). SUMOylation can occur without the requirement of a specific SUMO ligase (E3), where SUMO1 is transferred directly from UBE2I/Ubc9 to specific substrates. In Alzheimer's disease models SUMO1 has been shown to influence the generation of Amyloid-beta peptide by promoting the accumulation of BACE-1 (7). Covalent modification of Phosphatase and Tensin Homolog Deleted on Chromosome (PTEN) by SUMO1 is thought to regulate tumorigenesis by retaining PTEN at the plasma membrane, an effect that suppresses PI 3-Kinase/Akt-dependent tumor growth (8).

SUMO1 is covalently coupled to agarose beads via primary amines allowing for a fully functional C-terminus. Useful for affinity binding of SUMO1 activating enzyme, SUMO conjugating E2 enzyme UBE2I, SUMO1 ligases, SUMO C-terminal hydrolases, and other proteins/enzymes that have an affinity for SUMO1. The Ubiquitin-like SUMO1 is conjugated to a variety of proteins in the presence of UBE2I and the SAE1/SAE2 activating enzyme. SUMO modification has been implicated in functions such as nuclear transport, chromosome segregation, and transcriptional regulation.

Product Information

Quantity:	500 µl
Source:	<i>E. coli</i> -derived Accession # NM_003352
Stock:	Supplied as a solution of 20% (v/v) Ethanol in deionized water

Use & Storage

Use: SUMO1 Agarose is ideal for the enrichment of known SUMO1-interacting proteins as well as the discovery of novel SUMO1-interacting proteins. We recommend equilibrating the resin by washing with 5-10 mL of your desired aqueous buffer.

Storage: **Do not freeze.**

- 3 months from date of receipt, 2 to 8 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.

Literature

References:

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5. Tatham, M.H. *et al.* (2001) J. Biol. Chem. **276**:35368.
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