

MATERIAL DATA SHEET**HA-SUMO2 Vinyl Sulfone, *human recombinant*****Cat. # UL-759**

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. Human SUMO2 shares 100% aa sequence identity with mouse SUMO2. SUMO2 also has very high aa sequence identity with SUMO3 and SUMO4, 86% and 85%, respectively. SUMO2 shares only 44% aa 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. 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. In yeast, the SUMO-activating (E1) enzyme is Aos1/Uba2p. Because of the high level of aa sequence identity most studies report effects of SUMO2/3. For example, post-translational 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 SUMOylation with SUMO2/3, but not SUMO1, may represent an important mechanism to protect neurons during episodes of cerebral ischemia. 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.

This N-terminal HA-tagged SUMO is a potent, irreversible and specific inhibitor of SUMO-specific proteases (SENPs). This protein inhibits the hydrolysis of poly-SUMO chains on substrate proteins in vitro and thus enhances poly-SUMO chain accumulation. The HA peptide sequence (YPYDVPDYA) is derived from the influenza Hemagglutinin protein. This epitope allows for the sensitive identification or purification of SENP activities since it is specifically recognized by anti-HA antibodies and/or anti-HA-agarose.

Product Information

Quantity:	50 µg
Stock:	1.2 mg/ml (100 µM) in 50 mM MES, pH 6.0, 100mM NaCl, 10% glycerol
MW:	12 kDa
Purity:	> 90% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain

Use & Storage

Use: Add Recombinant Human HA-SUMO2 Vinyl Sulfone to *in vitro* assays to inhibit SUMO-specific isopeptidases (SENPs). The HA-tag allows for detection and purification of SUMO-specific isopeptidases (SENPs) activity. Reaction conditions will need to be optimized for each specific application. We recommend an initial HA-SUMO2 Vinyl Sulfone concentration of 1-5 μ M.

Storage: Store stock solution at -80°C. Avoid multiple freeze/thaw cycles.

Literature

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840 Memorial Drive, Cambridge, MA 02139 Phone: 617-576-2210 FAX: 617-492-3565

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