

**MATERIAL DATA SHEET****SUMO3 Rhodamine, *human recombinant*****Cat. # UL-767**

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).

SUMO3 modified with rhodamine red via primary amine coupling results in modification of lysine residues as well as the N-terminus. Although having a fully functional C-terminus, lysine modification may limit the ability of this reagent to propagate poly-SUMO chains. This labeled SUMO3 allows for direct spectrophotometric detection.

**Product Information**

<b>Quantity:</b>	50 µg
<b>Stock:</b>	X mg/ml (X µM) in 50 mM Hepes pH 8, 100 mM NaCl.
<b>MW:</b>	10.5 kDa
<b>Purity:</b>	> 95% by PAGE

**Use & Storage**

<b>Use:</b>	Rhodamine SUMO3 gives a strong signal in the range of 0.1-1 µM, depending on exact experimental conditions. Optimal fluorescence at pH 8.0 is monitored using Ex <sub>570</sub> nm and Em <sub>590</sub> nm wavelengths respectively.
<b>Storage:</b>	Store at -80°C. Avoid multiple freeze/ thaw cycles.

## Literature

- References:**
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