BostonBiochem®

An R&D Systems Company

MATERIAL DATA SHEET

Recombinant Human SUMO3 AMC
Cat. # UL-768

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).

This fluorogenic substrate for SUMO3 hydrolases is based on the carboxy-terminus derivatization of SUMO3 with 7-amido-4-methylcoumarin (AMC). SUMO3 AMC is useful for studying SUMO3 hydrolases (SENPs) when detection sensitivity or continuous monitoring of activity is essential.

Product Information	
Quantity:	50 µg
MW:	12 kDa
Source:	*E. coli*-derived Contains underivatized and C-terminal AMC derivatized protein, quantity is by derivatized content Accession # P55854
Stock:	X mg/ml (X µM) in 50 mM HEPES pH 6.5, 200 mM NaCl, 10 % (v/v) Glycerol.
Purity:	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

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Use & Storage

Use: SUMO3-AMC is a fluorogenic substrate for some SUMO-specific isopeptidases. Release of AMC fluorescence can be monitored with an excitation wavelength of 345 nm and an emission wavelength of 445 nm. Reaction conditions will need to be optimized for each specific application. We recommend an initial SUMO3-AMC concentration of 0.1-1 µM.

Storage: **Protect from light. 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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