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Product Information

SUMO-1
human, recombinant
expressed in *E. coli*

Product Number **S 0314**
Storage Temperature $-70\text{ }^{\circ}\text{C}$

Synonyms: Sentrin-1, GMP-1, PIC1

Product Description

SUMO-1 is produced from a human DNA sequence corresponding to human SUMO-1 and isolated from *E. coli* cells. SUMO-1 is a protein of 101 amino acids with a molecular mass of approximately 11.5 kDa. It has a low but significant homology with ubiquitin.¹

Almost all the SUMO-1 in cells is found conjugated to other proteins. Very little free SUMO-1 has been found. The proteins to which SUMO-1 is conjugated include p53 (tumor suppressor protein), I κ B α , and Ran GTPase-activating protein 1 (RanGAP1). Proteins that cannot be ubiquitinated and degraded in that pathway are processed by conjugation to SUMO-1.^{2,3} The factors required for conjugation have been elucidated with RanGAP1.⁴ Conjugation proceeds without the equivalent of an E₃ ubiquitin ligase. In the presence of SUMO-1 activating enzyme (SAE1/SAE2), Ucbh9, and ATP, SUMO-1 is efficiently conjugated to I κ B α .⁵ SUMO-1 labeling/modification is implicated in the progression of G₂ to M phase cell cycle progression.

SUMO-1 is supplied as a solution in 50 mM HEPES, pH 8.0, containing 150 mM NaCl and 1 mM DTT.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at $-70\text{ }^{\circ}\text{C}$ is recommended. The protein is stable to multiple freeze/thaw cycles.

References

1. Mahajan, R., et al., A small ubiquitin-related polypeptide involved in targeting RanGAP1 to nuclear pore complex protein RanBP2. *Cell*, **88**, 97-107 (1997).
2. Desterro, J. M., et al., SUMO-1 modification of I κ B α inhibits NF- κ B activation. *Mol. Cell*, **2**, 233-239 (1998).
3. Rodriguez, M. S., et al., SUMO-1 modification activates the transcriptional response of p53. *EMBO J.*, **18**, 6455-6461 (1999).
4. Saitoh, H., et al., Ubc9p and the conjugation of SUMO-1 to RanGAP1 and RanBP2. *Curr. Biol.*, **8**, 121-124 (1998).
5. Desterro, J. M. P., et al., Identification of the enzyme required for activation of the small ubiquitin-like protein SUMO-1. *J. Biol. Chem.*, **274**, 10618-10624 (1999).

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RBG/FEB/JWM/MAM 11/03

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