

MATERIAL DATA SHEET

SUMO1 Mutant Protein Set, *human recombinant*

Cat. # K-712

The ubiquitin-like SUMO-1, SUMO-2 and SUMO3 proteins are conjugated to a variety of proteins in the presence of Ubch9 and the SAE1/SAE2 (human) or Aos1/Uba2 (yeast) activating enzyme. SUMO modification has been implicated in diverse functions such as nuclear transport, chromosome segregation and transcriptional regulation, apoptosis and protein stability. Human SUMO-1 shares 46% and 47% identity with SUMO-2 and SUMO-3 respectively and does not contain the exact ψ KXE consensus sequence found in SUMO-2 and SUMO-3. Within this sequence ψ represents a large hydrophobic amino acid (I, L, or V), K is the lysine that becomes modified, X is any residue and E is glutamic acid. Many known SUMO-1 conjugation sites occur within this motif, but SUMOylation also occurs on lysine residues located within non-consensus regions. SUMO-1 has been shown to form chains *in vitro* and *in vivo* but often the linkage is uncharacterized, and the function of SUMO chains has not yet been fully elucidated. SUMO-1 multimerization *in vitro* has been shown to occur predominantly via K7, K16 and K17. The proteins in this kit have these lysine residues mutated to arginine and can be used to investigate mono-SUMOylation requirements or to reduce poly-SUMO chain formation. Included is wild-type SUMO-1 to be used as a positive control in SUMO-1 conjugation assays which can be performed using the SUMO-1 Conjugation Kit (**K-710**).

Product Information				
	Protein	MW	Concentration	Quantity
Supplied:	1. SUMO-1 wildtype	11.1 kDa	X mg/ml (X μ M)	50 μ g
	2. SUMO-1 K7R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	3. SUMO-1 K16R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	4. SUMO-1 K17R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	5. SUMO-1 K7R K16R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	6. SUMO-1 K7R K17R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	7. SUMO-1 K16R K17R	11.1 kDa	X mg/ml (X μ M)	50 μ g
	8. SUMO-1 K7R K16R K17R	11.1 kDa	X mg/ml (X μ M)	50 μ g
Stock:	50mM HEPES pH 8.0, 150mM NaCl, 1 mM DTT.			
Purity:	> 95 % by SDS-PAGE			

Use & Storage

Use:	Typical concentration to support conjugation reaction <i>in vitro</i> is 10 μ M-50 μ M depending on conditions.
Storage:	Store at -80°C. Avoid multiple freeze/thaw cycles.

Literature

References:	Adams M. D., <i>et al.</i> (1993) <u>Nat.Genet.</u> 4: 373-380 Bencsath K. P., <i>et al.</i> (2002) <u>J. Biol. Chem.</u> 277: 47938-47945 Dai K.-S. and Liew C.-C. (2001) <u>J.Biol.Chem.</u> 276: 23992-23999 Desterro J.M., <i>et al.</i> (1997) <u>FEBS. Lett.</u> 417:297-300 Dohmen R.J. (2004) <u>Biophys. Biochem. Acta.</u> 1695:113-131 Chung T.L., <i>et al.</i> (2004) <u>J.Biol.Chem.</u> 279: 39653-39662. Gill G. (2004) <u>Genes.Dev.</u> 18:2046-2059 Hilgarth R.S., <i>et al.</i> (2004) <u>J.Biol.Chem.</u> 279: 53899-53902 Huang W-C. <i>et al.</i> (2004) <u>Eur. J. Biochem.</u> 271: 4114-4122 Johnson E. S. and Gupta A. A., (2001) <u>Cell</u> 106: 735-744 Johnson E.S. (2004) <u>Annu. Rev. Biochem.</u> 73: 355-382 Kamitani T., <i>et al.</i> (1998) <u>J.Biol.Chem.</u> 273: 11349-11353 Lapenta V. <i>et al.</i> (1997) <u>Genomics</u> 40: 362-366 Mannen H., <i>et al.</i> (1996) <u>Biochem.Biophys.Res.Comm.</u> 222:178-180 Meluh P.B. and Koshland D. (1995) <u>Mol. Biol. Cell</u> 6: 793-807 Okama T., <i>et al.</i> (1999) <u>Biochem. Biophys. Res. Comm.</u> 254:693-698 Pedrioli G. A., <i>et al.</i> (2006) <u>Nat. Meth.</u> 3:533-539 Pichler A., <i>et al.</i> (2002) <u>Cell</u> 108: 109-120 Rodriguez M.S <i>et al.</i> (2001) <u>J. Biol. Chem.</u> 276:12654-59 Saitoh H. and Hinchey J. (2000) <u>J.Biol. Chem.</u> 275:6252-6258 Sampson D.A., <i>et al.</i> (2001) <u>J.Biol.Chem.</u> 276: 21664-21669 Seeler J-S. and Dejean A. (2003) <u>Nat. Rev.</u> 4:690-699 Su H-L., <i>et al.</i> (2002) <u>Gene</u> 296:65-73 Subramanian L., <i>et al.</i> (2003) <u>J.Biol. Chem.</u> 278:9134-9141 Schwartz D.C. and Hochstrasser M. (2003) <u>Tren. Biochem.Sci.</u> 28:321-328 Takahashi Y., <i>et al.</i> (2003) <u>J. Biochem.</u> 133:415-422 Tatham M.H., <i>et al.</i> (2001) <u>J. Biol. Chem.</u> 276:35368-35374 Yang M., <i>et al.</i> (2006) <u>J.Biol.Chem.</u> 281: 8264-8274
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