Ubc9 (human), (recombinant) (untagged)

Ubc9, the only SUMO E2 enzyme, conjugates activated SUMO and mediates its subsequent linkage, via C-terminal isopeptide bond formation, to a number of proteins, including RanGAP1, SP100, p53, IκBα and PML, without the absolute requirement for an E3 ubiquitin-protein ligase-like activity. SUMOylation is involved in a range of processes including nuclear protein targeting, formation of sub-nuclear complexes, regulation of transcriptional activities, and control of protein stability.

The mechanism for SUMO conjugation is analogous to that of the ubiquitin system. Unlike ubiquitinylation, which leads inter alia to a degradative pathway, SUMO modification of target proteins is involved in nuclear protein targeting, formation of sub-nuclear complexes, regulation of transcriptional activities, and control of protein stability. A short sequence containing the consensus Ψ-K-X-D/E (where lysine is the modified amino acid, Ψ is a large hydrophobic residue and X is any amino acid residue) is thought to be necessary for protein SUMOylation to occur however SUMOylation has also been observed in cases where the consensus site is not conserved. Ubc9, the only SUMO E2 enzyme, conjugates activated SUMO (but not ubiquitin) and mediates its subsequent linkage, via C-terminal isopeptide bond formation, to a number of proteins, including RanGAP1, SP100, p53, IκBα and PML, without the absolute requirement for an E3 ubiquitin-protein ligase-like activity, at least *in vitro*. Direct interaction of UbcH9 with protein substrates, an unusual feature for an E2 conjugating enzyme, is thought to play a role in substrate recognition.The SUMO E1 activating enzyme heterodimer (Aos1/Uba2) is also required for initiation of the SUMOylation cascade.

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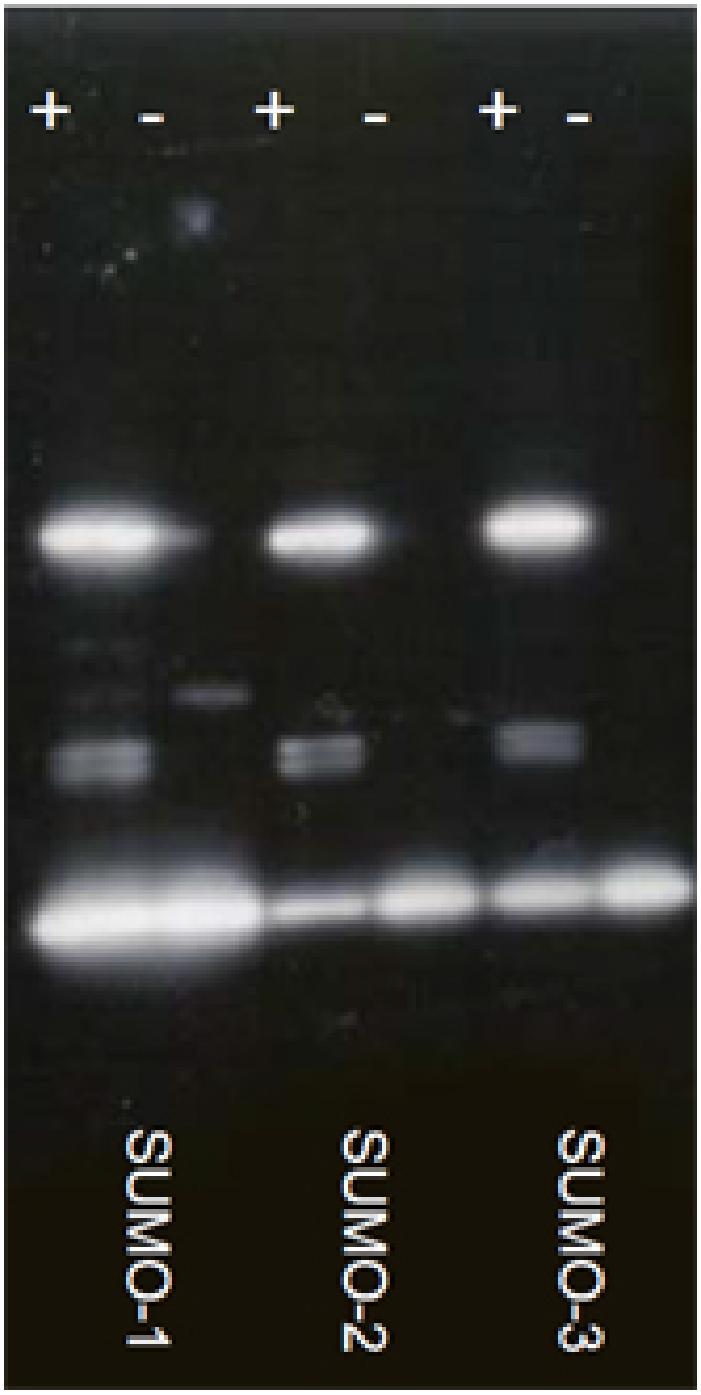
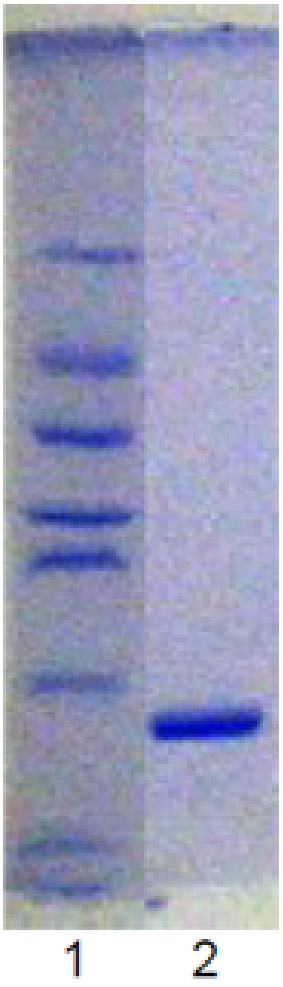
BML-UW9320-0100	100µg

Manuals, SDS & CofA View Online »



SUMOylation assays for RANGAP1 target protein using SUMO-1, 2 and 3. SUMOylated proteins were detected by Western blotting using the appropriate BIOMOL SUMO antibodies. Results demonstrate the formation of SUMOylated target proteins of the expected size in all ATP containing reactions (+). The absence of such conjugates in negative control reactions (–) demonstrates that their formation is ATP dependent (required for E1 activation) and hence derived from the SUMO cascade.



Coomassie stained gel of BML-UW9320. Lane 1: MW markers (top to bottom) 66, 45, 36, 29, 24, 20, 14 and 6. Lane 2: BML-UW9320 (2µg).

Handling & Storage

Long Term Storage	-80°C
Shipping	Dry Ice

Regulatory Status

RUO - Research Use Only

Product Details

Application Notes	**Uses:** 1. SUMO modification of specific proteins *in vitro.* 2. Demonstrate novel proteins are potential targets for SUMOylation under in vitro conditions. 3. Generate substrates for deSUMOylating enzymes. 4. Investigation of direct Ubc9-substrate interactions.
Formulation	Liquid. In 20mM HEPES, pH 7.3, containing 110mM potassium acetate, 2mM magnesium acetate, 0.8mM EGTA, and 1mM DTT.
MW	~18kDa
Purity	≥95% (SDS-PAGE)
Purity Detail	Purified by ion-exchange chromatography.
Sequence	Accession number: P63279; Length: 158 amino acid residues.
Source	Produced in *E. coli* as an untagged protein.
UniProt ID	P63279

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