RanBP2ΔFG (human), (recombinant) (GST-tag)

RanBP2 directly interacts with the E2 enzyme Ubc9 and strongly enhances SUMO-1 transfer from Ubc9 to the SUMO-1 target Sp100. The SUMO1 E3 ligase activity is contained within a 33kDa domain of RanBP2 that lacks RING finger motifs.

Post-translational modification with SUMO-1 regulates protein-protein interactions, localisation and stability. SUMOylation requires the E1 enzyme Aos1/Uba2 (Prod. No. BML-UW9330) and the E2 enzyme Ubc9 (Prod. No. BML-UW9320). A family of E3-like factors, PIAS proteins has been discovered, however, the nucleoporin RanBP2 also has SUMO-1 E3-like activity.
Modification of the histone deactylase HDAC4 depends upon the presence of an intact nuclear localisation signal and is catalysed by the nuclear pore complex (NPC) RanBP2 protein. This suggests that SUMOylation of HDAC4 takes place at the NPC and is coupled to nuclear import. This and other findings suggests that SUMOylation may be an important regulatory mechanism for the
control of transcriptional repression mediated by both class I and II HDACs.
Mdm2, a ubiquitin ligase that acts on the tumour suppressor p53, is regulated by SUMOylation. It has been shown that Mdm2 is SUMOylated during nuclear translocation by RanBP2 and then further SUMOylated once in the nucleus by PIASxβ and PIAS1.
The RanGTPase activating protein RanGAP1 has essential functions in both nucleocytoplasmic transport and mitosis. In interphase, a significant fraction of vertebrate SUMO-1-modified RanGAP1 forms a stable complex with RanBP2 at nuclear pore complexes. RanGAP1 is subject to phosphorylation and it has been demonstrated that phosphorylated RanGAP1 remains associated with RanBP2 and Ubc9 in mitosis. Thus, mitotic phosphorylation may have functional consequences for the RanGTPase cycle and/or for RanBP2-dependent SUMOylation.

Ordering Information

Order Online »

BML-UW9455-0100	100µg

Manuals, SDS & CofA

View Online »

Handling & Storage

Long Term Storage -80°C

Shipping Dry Ice

Regulatory Status RUO - Research Use Only

Product Details

Biological Activity

The enzyme facilitates *in vitro* SUMOylation using SUMO-1 (Prod. No. BML-UW9195), SUMO E1 (Prod. No. BML-UW9330), and SUMO E2 UbcH9 (Prod. No. BML-UW9320).

Formulation

Liquid. In 20mM HEPES, pH7.3 containing 110mM potassium acetate, 2mM magnesium acetate, 0.8mM EGTA, 1mM DTT.

MW

59 kDa

Purity

≥90% (SDS-PAGE)

Purity Detail

Purified by GST-based chromatography.

Source

Produced in *E. coli*. RanBP2ΔFG (aa 2553-2838) is fused to a GST-tag.

UniProt ID

P49792

Last modified: May 29, 2024

ENZO LIFE SCIENCES, INC.
Phone: 800.942.0430
info-usa@enzolifesciences.com

European Sales Office
ENZO LIFE SCIENCES (ELS) AG
Phone: +41 61 926 8989
info-eu@enzolifesciences.com

Belgium, The Netherlands & Luxembourg
Phone: +32 3 466 0420
info-be@enzolifesciences.com

France
Phone: +33 472 440 655
info-fr@enzolifesciences.com

Germany
Phone: +49 7621 5500 526
info-de@enzolifesciences.com

UK & Ireland
Phone (UK customers): 0845 601 1488
Phone: +44 1392 825900
info-uk@enzolifesciences.com

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