

SENP5 (E-23): sc-130659

BACKGROUND

SUMO (small ubiquitin-related modifier), a member of the ubiquitin-like protein family, regulates diverse cellular functions of a variety of target proteins, including transcription, DNA repair, nucleocytoplasmic trafficking and chromosome segregation. SUMO precursor proteins undergo cleavage of the residues after the "GG" region by SUMO-specific proteases in maturation. This cleavage of the precursor is a prerequisite for subsequent sumoylation. The sentrin-specific (or SUMO-specific) protease (SENP) proteins belong to the peptidase C48 family and include SENP1-3 and SENP5-8. SENP1, SENP2 and SENP3 degrade UBL1 and SMT3H2 conjugates and subsequently release the monomers from sumoylated substrates. HIPK2 is a desumoylation target for SENP1 which shuttles between the cytoplasm and the nucleus. Mutation analyses reveal that SENP1 contains the nuclear export sequence (NES) within the extreme carboxyl-terminal region, and SENP1 is exported to the cytoplasm in a NES-dependent manner. SENP2 has been implicated as a downregulator of CTNNB1 levels and may therefore be a modulator of the Wnt pathway. SUMO protease SENP3 reverses the sumoylation of MEF2 to augment its transcriptional and myogenic activities. SENP5 localizes to the nucleolus and preferentially processes SUMO-3. It is thought to play a role in mitosis and/or cytokinesis. SENP6 localizes to the cytoplasm and releases SUMO-1. Expression of SENP6 is higher in reproductive organs, indicating that it may mediate processes related to reproduction. SENP8 is involved in the release of sentrins.

REFERENCES

- Gong, L. et al. 2000. Differential regulation of sentrinized proteins by a novel sentrin-specific protease. *J. Biol. Chem.* 275: 3355-3359.
- Kim, K.I., et al. 2000. A new SUMO-1-specific protease, SUSP1, that is highly expressed in reproductive organs. *J. Biol. Chem.* 275: 14102-14106.
- Cheng, J., et al. 2004. SENP1 enhances androgen receptor-dependent transcription through desumoylation of histone deacetylase 1. *Mol. Cell Biol.* 24: 6021-6028.
- Reverter, D., et al. 2004. A basis for SUMO protease specificity provided by analysis of human SENP2 and a SENP2-SUMO complex. *Structure* 12: 1519-1531.
- Kim, YH. et al. 2005. Desumoylation of homeodomain-interacting protein kinase 2 (HIPK2) through the cytoplasmic-nuclear shuttling of the SUMO-specific protease SENP1. *FEBS. Lett.* 579: 6272-6278.
- Xu, Z., et al. 2005. Mapping residues of SUMO precursors essential in differential maturation by SUMO-specific protease, SENP1. *Biochem J.* 386: 325-330.

CHROMOSOMAL LOCATION

Genetic locus: SENP5 (human) mapping to 3q29; Senp5 (mouse) mapping to 16 B2.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

SOURCE

SENP5 (E-23) is a Protein G purified rabbit polyclonal antibody raised against a synthetic peptide corresponding to amino acids 539-555 of SENP5 of human origin.

PRODUCT

Each vial contains IgG in 200 µl of PBS with < 0.1% sodium azide.

APPLICATIONS

SENP5 (E-23) is recommended for detection of SENP5 of mouse and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:250-1:500) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

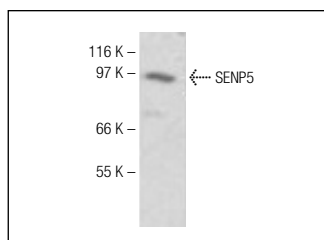
Suitable for use as control antibody for SENP5 siRNA (h): sc-61522, SENP5 siRNA (m): sc-61523, SENP5 shRNA Plasmid (h): sc-61522-SH, SENP5 shRNA Plasmid (m): sc-61523-SH, SENP5 shRNA (h) Lentiviral Particles: sc-61522-V and SENP5 shRNA (m) Lentiviral Particles: sc-61523-V.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



SENP5 (E-23): sc-130659. Western blot analysis of SENP5 expression in HeLa whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.