SANTA CRUZ BIOTECHNOLOGY, INC.

SENP7 (H-45): sc-135172

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The Power to Question

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

1. Gong, L., et al. 2000. Differential regulation of sentrinized proteins by a novel sentrin-specific protease. J. Biol. Chem. 275: 3355-3359.
2. 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.
3. Cheng, J., et al. 2004. SENP1 enhances androgen receptor-dependent transcription through desumoylation of histone deacetylase 1. Mol. Cell. Biol. 24: 6021-6028.
4. 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.
5. Kim, Y.H., 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.

CHROMOSOMAL LOCATION

Genetic locus: SENP7 (human) mapping to 3q12.3; Senp7 (mouse) mapping to 16 C1.1.

SOURCE

SENP7 (H-45) is a rabbit polyclonal antibody raised against amino acids 912-956 mapping near the N-terminus of SENP7 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SENP7 (H-45) is recommended for detection of SENP7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

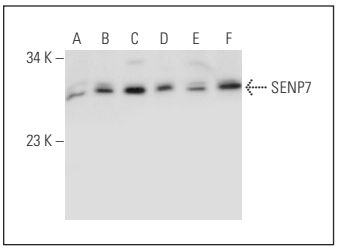
SENP7 (H-45) is also recommended for detection of SENP7 in additional species, including equine and canine.

Suitable for use as control antibody for SENP7 siRNA (h): sc-61526, SENP7 siRNA (m): sc-61527, SENP7 shRNA Plasmid (h): sc-61526-SH, SENP7 shRNA Plasmid (m): sc-61527-SH, SENP7 shRNA (h) Lentiviral Particles: sc-61526-V and SENP7 shRNA (m) Lentiviral Particles: sc-61527-V.

Molecular Weight of SENP7: 34 kDa.

Positive Controls: HUV-EC-C whole cell lysate: sc-364180, HeLa whole cell lysate: sc-2200 or mouse kidney extract: sc-2255.

DATA



SENP7 (H-45): sc-135172. Western blot analysis of SENP7 expression in WI-38 (**A**), HUV-EC-C (**B**), HeLa (**C**), NIH/3T3 (**D**) and Jurkat (**E**) whole cell lysates and mouse kidney tissue extract (**F**).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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.