

# SEN2 (W-24): sc-130871

## 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 (SEN) proteins belong to the peptidase C48 family and include SEN1–3 and SEN5–8. SEN1, SEN2 and SEN3 degrade UBL1 and SMT3H2 conjugates and subsequently release the monomers from sumoylated substrates. HIPK2 is a desumoylation target for SEN1 which shuttles between the cytoplasm and the nucleus. Mutation analyses reveal that SEN1 contains the nuclear export sequence (NES) within the extreme carboxyl-terminal region, and SEN1 is exported to the cytoplasm in a NES-dependent manner. SEN2 has been implicated as a downregulator of CTNNB1 levels and may therefore be a modulator of the Wnt pathway. SUMO protease SEN3 reverses the sumoylation of MEF-2 to augment its transcriptional and myogenic activities. SEN5 localizes to the nucleolus and preferentially processes SUMO-3. It is thought to play a role in mitosis and/or cytokinesis. SEN6 localizes to the cytoplasm and releases SUMO-1. Expression of SEN6 is higher in reproductive organs, indicating that it may mediate processes related to reproduction. SEN8 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. SEN1 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 SEN2 and a SEN2-SUMO complex. *Structure* 12: 1519-1531.

## CHROMOSOMAL LOCATION

Genetic locus: SEN2 (human) mapping to 3q27.2; Senp2 (mouse) mapping to 16 B1.

## SOURCE

SEN2 (W-24) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of SEN2 of human origin.

## 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.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

SEN2 (W-24) is recommended for detection of SEN2 of mouse 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SEN2 siRNA (h): sc-44450, SEN2 siRNA (m): sc-72204, SEN2 shRNA Plasmid (h): sc-44450-SH, SEN2 shRNA Plasmid (m): sc-72204-SH, SEN2 shRNA (h) Lentiviral Particles: sc-44450-V and SEN2 shRNA (m) Lentiviral Particles: sc-72204-V.

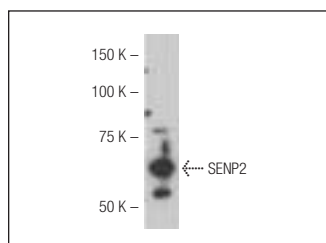
Molecular Weight of SEN2: 68 kDa.

Positive Controls: mouse liver tissue extract or mouse heart tissue extract.

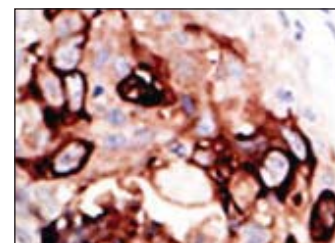
## RECOMMENDED SECONDARY REAGENTS

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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



SEN2 (W-24): sc-130871. Western blot analysis of SEN2 expression in mouse heart tissue extract.



SEN2 (W-24): sc-130871. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic localization.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.