SANTA CRUZ BIOTECHNOLOGY, INC.

SENP1 (C-12): sc-271360

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.

CHROMOSOMAL LOCATION

Genetic locus: SENP1 (human) mapping to 12q13.11; Senp1 (mouse) mapping to 15 F1.

SOURCE

SENP1 (C-12) is a mouse monoclonal antibody raised against amino acids 361-425 mapping within an internal region of SENP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SENP1 (C-12) is available conjugated to agarose (sc-271360 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271360 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271360 PE), fluorescein (sc-271360 FITC), Alexa Fluor® 488 (sc-271360 AF488), Alexa Fluor® 546 (sc-271360 AF546), Alexa Fluor® 594 (sc-271360 AF594) or Alexa Fluor® 647 (sc-271360 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271360 AF680) or Alexa Fluor® 790 (sc-271360 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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.

APPLICATIONS

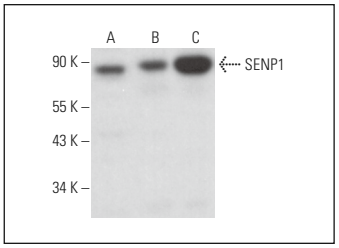
SENP1 (C-12) is recommended for detection of SENP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SENP1 siRNA (h): sc-44449, SENP1 siRNA (m): sc-45715, SENP1 shRNA Plasmid (h): sc-44449-SH, SENP1 shRNA Plasmid (m): sc-45715-SH, SENP1 shRNA (h) Lentiviral Particles: sc-44449-V and SENP1 shRNA (m) Lentiviral Particles: sc-45715-V.

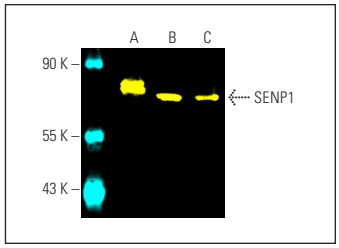
Molecular Weight of SENP1: 73 kDa.

Positive Controls: F9 cell lysate: sc-2245, Neuro-2A whole cell lysate: sc-364185 or K-562 whole cell lysate: sc-2203.

DATA



SENP1 (C-12): sc-271360. Western blot analysis of SENP1 expression in NIH/3T3 (**A**), Neuro-2A (**B**) and F9 (**C**) whole cell lysates.



SENP1 (C-12) Alexa Fluor® 488: sc-271360 AF488. Direct fluorescent western blot analysis of SENP1 expression in F9 (**A**), K-562 (**B**) and HEK293 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.

SELECT PRODUCT CITATIONS

1. Qin, Y., et al. 2014. SUMOylation alterations are associated with multidrug resistance in hepatocellular carcinoma. Mol. Med. Rep. 9: 877-881.
2. Traboulsi, T., et al. 2018. Role of SUMOylation in differential ERα transcriptional repression by tamoxifen and fulvestrant in breast cancer cells. Oncogene 38: 1019-1037.
3. Theurillat, I., et al. 2020. Extensive SUMO modification of repressive chromatin factors distinguishes pluripotent from somatic cells. Cell Rep. 32: 108146.
4. Lin, H., et al. 2021. β-cell knockout of SENP1 reduces responses to incretins and worsens oral glucose tolerance in high-fat diet-fed mice. Diabetes 70: 2626-2638.
5. Li, Y.Y., et al. 2022. TCR-induced tyrosine phosphorylation at Tyr270 of SUMO protease SENP1 by Lck modulates SENP1 enzyme activity and specificity. Front. Cell Dev. Biol. 9: 789348.

PROTOCOLS

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