SANTA CRUZ BIOTECHNOLOGY, INC.

SENP7 (E-8): sc-373821

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

SENP7 (E-8) is a mouse monoclonal antibody raised against amino acids 912-956 mapping near the N-terminus of SENP7 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SENP7 (E-8) is available conjugated to agarose (sc-373821 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373821 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373821 PE), fluorescein (sc-373821 FITC), Alexa Fluor® 488 (sc-373821 AF488), Alexa Fluor® 546 (sc-373821 AF546), Alexa Fluor® 594 (sc-373821 AF594) or Alexa Fluor® 647 (sc-373821 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373821 AF680) or Alexa Fluor® 790 (sc-373821 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

SENP7 (E-8) is recommended for detection of SENP7 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), 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).

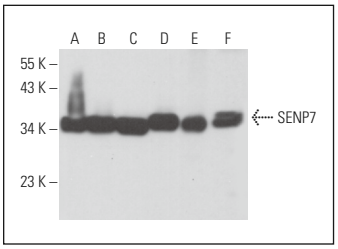
Suitable for use as control antibody for SENP7 siRNA (h): sc-61526, SENP7 siRNA (m): sc-61527, SENP7 shRNA Plasmid (h): sc-61526-SH, SENP7 shRNA Plasmid (m): sc-61527-SH, SENP7 shRNA (h) Lentiviral Particles: sc-61526-V and SENP7 shRNA (m) Lentiviral Particles: sc-61527-V.

Molecular Weight (predicted) of SENP7 isoforms: 120/116/28/101/112 kDa.

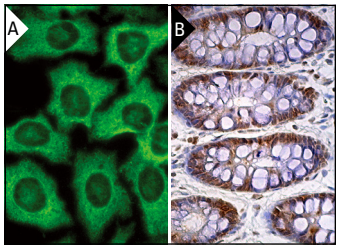
Molecular Weight (observed) of SENP7: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, 3T3-L1 cell lysate: sc-2243 or HUV-EC-C whole cell lysate: sc-364180.

DATA



SENP7 (E-8): sc-373821. Western blot analysis of SENP7 expression in HUV-EC-C (**A**), HeLa (**B**), Jurkat (**C**) and 3T3-L1 (**D**) whole cell lysates and mouse kidney (**E**) and rat testis (**F**) tissue extracts.



SENP7 (E-8): sc-373821. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Xiang, J.W., et al. 2018. Differential expression of seven de-sumoylation enzymes (SENPs) in major ocular tissues of mouse eye. Curr. Mol. Med. 18: 533-541.
2. Ploypetch, S., et al. 2019. Salivary proteomics of canine oral tumors using MALDI-TOF mass spectrometry and LC-tandem mass spectrometry. PLoS ONE 14: e0219390.
3. Liu, K., et al. 2020. A fine-tuning mechanism underlying self-control for autophagy: deSUMOylation of BECN1 by SENP3. Autophagy 16: 975-990.
4. Colnaghi, L., et al. 2020. Neuronal localization of SENP proteins with super resolution microscopy. Brain Sci. 10: 778.
5. Liu, Y., et al. 2023. Mitochondrial SENP2 regulates the assembly of SDH complex under metabolic stress. Cell Rep. 42: 112041.

PROTOCOLS

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