SANTA CRUZ BIOTECHNOLOGY, INC.

SMU1 (JS-12): sc-100896

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. SMU1 (suppressor of mec8 and unc-52 homolog), also known as BWD (brain-enriched WD), is a member of the WD-repeat SMU1 family and contains one CTLH domain, one LisH domain and six WD-repeats. SMU1 is a homolog of the *C. elegans* protein SMU1, a ubiquitously expressed nuclear protein that is believed to play a role in alternative splicing events of unc-52. In mammals, SMU1 is a component of the spliceosome and appears to exhibit a conserved function, affecting the splicing of the mammalian unc-52 homolog, namely Perlecan. Mutations in the gene encoding SMU1 may affect the function of the spliceosome.

REFERENCES

1. Lundquist, E.A., et al. 1994. The mec-8 gene of *Caenorhabditis elegans* affects muscle and sensory neuron function and interacts with three other genes: unc-52, SMU1 and SMU2. Genetics 138: 83-101.
2. Di Benedetto, A.J., et al. 2001. Cloning and molecular characterization of a novel gene encoding a WD-repeat protein expressed in restricted areas of adult rat brain. Gene 271: 21-31.
3. Spike, C.A., et al. 2001. Analysis of SMU1, a gene that regulates the alternative splicing of unc-52 pre-mRNA in *Caenorhabditis elegans*. Mol. Cell. Biol. 21: 4985-4995.
4. Watts, G.D., et al. 2003. Clinical and genetic heterogeneity in chromosome 9p associated hereditary inclusion body myopathy: exclusion of GNE and three other candidate genes. Neuromuscul. Disord. 13: 559-567.
5. Smith, D.G., et al. 2004. An Ste20 homologue in *Ustilago maydis* plays a role in mating and pathogenicity. Eukaryot. Cell 3: 180-189.

CHROMOSOMAL LOCATION

Genetic locus: SMU1 (human) mapping to 9p21.1; Smu1 (mouse) mapping to 4 A5.

SOURCE

SMU1 (JS-12) is a mouse monoclonal antibody raised against recombinant SMU1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

SMU1 (JS-12) is recommended for detection of SMU1 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).

Suitable for use as control antibody for SMU1 siRNA (h): sc-92830, SMU1 siRNA (m): sc-153642, SMU1 shRNA Plasmid (h): sc-92830-SH, SMU1 shRNA Plasmid (m): sc-153642-SH, SMU1 shRNA (h) Lentiviral Particles: sc-92830-V and SMU1 shRNA (m) Lentiviral Particles: sc-153642-V.

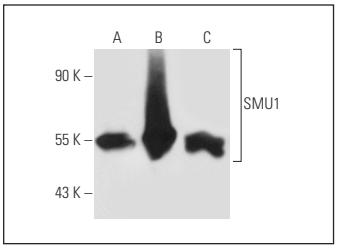
Molecular Weight of SMU1: 58 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, SMU1 (h): 293T Lysate: sc-111772 or K-562 whole cell lysate: sc-2203.

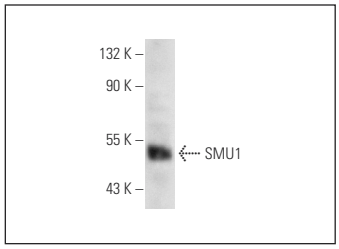
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SMU1 (JS-12): sc-100896. Western blot analysis of SMU1 expression in non-transfected 293T: sc-117752 (**A**), human SMU1 transfected 293T: sc-111772 (**B**) and K-562 (**C**) whole cell lysates.



SMU1 (JS-12): sc-100896. Western blot analysis of SMU1 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

1. Keiper, S., et al. 2019. SMU1 and RED are required for activation of spliceosomal B complexes assembled on short introns. Nat. Commun. 10: 3639.
2. Ka, H.I., et al. 2020. Deubiquitinase USP47-stabilized splicing factor IK regulates the splicing of ATM pre-mRNA. Cell Death Discov. 6: 34.

RESEARCH USE

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