

# SMU1 (JS-12): sc-100896

## 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

- 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.
- 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.
- 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.
- 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.
- Smith, D.G., et al. 2004. An Ste20 homologue in *Ustilago maydis* plays a role in mating and pathogenicity. *Eukaryot. Cell* 3: 180-189.
- Spartz, A.K., et al. 2004. SMU2 and SMU1, *Caenorhabditis elegans* homologs of mammalian spliceosome-associated proteins RED and fSAP57, work together to affect splice site choice. *Mol. Cell. Biol.* 24: 6811-6823.

## 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<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

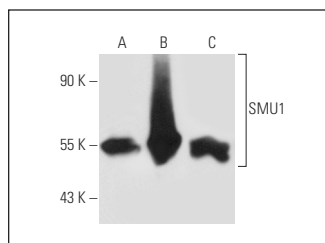
Molecular Weight of SMU1: 58 kDa.

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

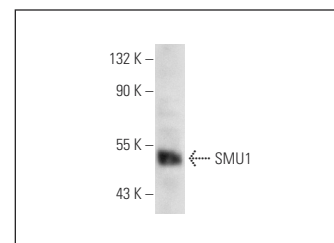
## RECOMMENDED SUPPORT REAGENTS

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-111772 (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

- Keiper, S., et al. 2019. SMU1 and RED are required for activation of spliceosomal B complexes assembled on short introns. *Nat. Commun.* 10: 3639.

## 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.