SANTA CRUZ BIOTECHNOLOGY, INC.

Gemin5 (10G11): sc-136200

BACKGROUND

Spinal muscular atrophy (SMA) is an autosomal recessive neurodegenerative disease characterized by loss of motor neurons in the spinal cord. SMA is caused by deletion or loss-of-function mutations in the SMN (survival of motor neuron) gene. Gemin5, the protein product of human chromosome 5q33.2, associates directly with SMN and is a part of the SMN complex containing Gemin2, Gemin3, Gemin4 and Gemin6 as well as several spliceosomal snRNP proteins. The SMN complex plays an essential role in spliceosomal snRNP assembly in the cytoplasm and is required for pre-mRNA splicing of the nucleus. The SMN complex is found in both the cytoplasm and the nucleus. The nuclear form is concentrated in subnuclear bodies called gems (Gemini of the coiled bodies). Gemin5 interacts with several snRNP core proteins including SmB, SmD1, SmD2, SmD3 and SmE. The amino-terminal half of Gemin5 contains 13 WD repeat domains and a coiled-coil motif near the C-terminus.

REFERENCES

1. Fischer, U., et al. 1997. The SMN-SIP1 complex has an essential role in spliceosomal snRNP biogenesis. Cell 90: 1023-1029.
2. Coovert, D., et al. 1997. The survival motor neuron protein in spinal muscular atrophy. Hum. Mol. Genet. 6: 1205-1214.
3. Monani, U., et al. 1999. A single nucleotide difference that alters splicing patterns distinguishes the SMA gene SMN1 from the copy gene SMN2. Hum. Mol. Genet. 8: 1177-1183.

CHROMOSOMAL LOCATION

Genetic locus: GEMIN5 (human) mapping to 5q33.2.

SOURCE

Gemin5 (10G11) is a mouse monoclonal antibody raised against a His-tagged recombinant protein corresponding to full-length Gemin5 of human origin.

PRODUCT

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

Gemin5 (10G11) is available conjugated to agarose (sc-136200 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-136200 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-136200 PE), fluorescein (sc-136200 FITC), Alexa Fluor® 488 (sc-136200 AF488), Alexa Fluor® 546 (sc-136200 AF546), Alexa Fluor® 594 (sc-136200 AF594) or Alexa Fluor® 647 (sc-136200 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-136200 AF680) or Alexa Fluor® 790 (sc-136200 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Gemin5 (10G11) is recommended for detection of Gemin5 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Gemin5 siRNA (h): sc-42131, Gemin5 shRNA Plasmid (h): sc-42131-SH and Gemin5 shRNA (h) Lentiviral Particles: sc-42131-V.

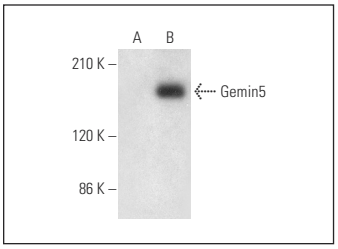
Molecular Weight of Gemin5: 169 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or human Gemin5 transfected HEK293T whole cell lysate.

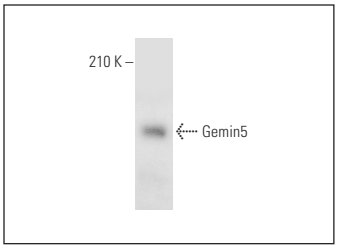
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Gemin5 (10G11): sc-136200. Western blot analysis of Gemin5 expression in non-transfected (**A**) and human Gemin5 transfected (**B**) HEK293T whole cell lysates.



Gemin5 (10G11): sc-136200. Western blot analysis of Gemin5 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Battle, D.J., et al. 2007. SMN-independent subunits of the SMN complex. Identification of a small nuclear ribonucleoprotein assembly intermediate. J. Biol. Chem. 282: 27953-27959.
2. Schertzer, M., et al. 2015. Human regulator of telomere elongation helicase 1 (RTEL1) is required for the nuclear and cytoplasmic trafficking of pre-U2 RNA. Nucleic Acids Res. 43: 1834-1847.
3. Yu, Y., et al. 2015. U1 snRNP is mislocalized in ALS patient fibroblasts bearing NLS mutations in FUS and is required for motor neuron outgrowth in zebrafish. Nucleic Acids Res. 43: 3208-3218.
4. Zheng, Q., et al. 2019. Internal ribosome entry site dramatically reduces transgene expression in hematopoietic cells in a position-dependent manner. Viruses 11: 920.

RESEARCH USE

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