SANTA CRUZ BIOTECHNOLOGY, INC.

Gemin2 (A-9): sc-166187

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Gemin2 (formerly known as SIP1 for SMN interacting protein) associates directly with SMN and is a part of the SMN complex containing Gemin3 (a DEAD-box RNA helicase), Gemin4, Gemin5 and Gemin6, as well as several spliceosomal snRNP proteins. The SMN complex plays an essential role in splicesomal snRNP assembly in the cytoplasm and is required for pre-mRNA splicing of the nucleus. It is found in both the cytoplasm and the nucleus. The nuclear form is concentrated in subnuclear bodies called gems (Gemini of the coiled bodies). The SMN-Gemin2 complex is associated with spliceosomal snRNAs U1 and U5. Gemin2 is expressed in spinal cord. It can be induced by TGFβ treatment and expression is high in several E-cadherin negative human carcinoma cell lines. SMN is expressed in a wide variety of tissues including brain, kidney, liver and spinal cord, and moderately in skeletal and cardiac muscle.

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.

CHROMOSOMAL LOCATION

Genetic locus: GEMIN2 (human) mapping to 14q21.1; Gemin2 (mouse) mapping to 12 C1.

SOURCE

Gemin2 (A-9) is a mouse monoclonal antibody raised against amino acids 2-101 mapping at the N-terminus of Gemin2 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.

APPLICATIONS

Gemin2 (A-9) is recommended for detection of Gemin2 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 Gemin2 siRNA (h): sc-42129, Gemin2 siRNA (m): sc-42130, Gemin2 shRNA Plasmid (h): sc-42129-SH, Gemin2 shRNA Plasmid (m): sc-42130-SH, Gemin2 shRNA (h) Lentiviral Particles: sc-42129-V and Gemin2 shRNA (m) Lentiviral Particles: sc-42130-V.

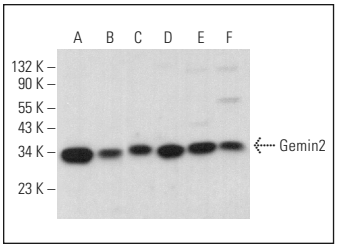
Molecular Weight of Gemin2: 32-34 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HEL 92.1.7 cell lysate: sc-2270 or PC-12 cell lysate: sc-2250.

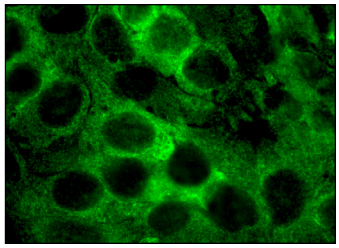
RECOMMENDED SUPPORT REAGENTS

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



Gemin2 (A-9): sc-166187. Western blot analysis of Gemin2 expression in Hep G2 (**A**), BT-20 (**B**), M1 (**C**), HEL 92.1.7 (**D**), P19 (**E**) and PC-12 (**F**) whole cell lysates.



Gemin2 (A-9): sc-166187. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Rafalowska, J., et al. 2014. Diverse expression of selected SMN complex proteins in humans with sporadic amyotrophic lateral sclerosis and in a transgenic rat model of familial form of the disease. PLoS ONE 9: e104614.
2. Sulejczak, D., et al. 2018. Sporadic amyotrophic lateral sclerosis: is SMN-Gemins protein complex of importance for the relative resistance of oculomotor nucleus motoneurons to degeneration?. Folia Neuropathol. 56: 308-320.

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.

PROTOCOLS

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