SANTA CRUZ BIOTECHNOLOGY, INC.

Gemin2 (1G9): sc-33703

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. 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). The SMN-Gemin2 complex is associated with spliceosomal snRNAs U1 and U5. Gemin2 is expressed in spinal cord. Gemin2 can be induced by TGFβ treatment and expression is high in several E-cadherin negative human carcinoma cell lines. SMN in 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.
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.
4. Meister, G., et al. 2000. Characterization of a nuclear 20S complex containing the survival of motor neurons (SMN) protein and a specific subset of spliceosomal Sm proteins. Hum. Mol. Genet. 9: 1977-1986.

CHROMOSOMAL LOCATION

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

SOURCE

Gemin2 (1G9) is a mouse monoclonal antibody raised against recombinant 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.

Gemin2 (1G9) is available conjugated to agarose (sc-33703 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-33703 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33703 PE), fluorescein (sc-33703 FITC), Alexa Fluor® 488 (sc-33703 AF488), Alexa Fluor® 546 (sc-33703 AF546), Alexa Fluor® 594 (sc-33703 AF594) or Alexa Fluor® 647 (sc-33703 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33703 AF680) or Alexa Fluor® 790 (sc-33703 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Gemin2 (1G9) is recommended for detection of Gemin2 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

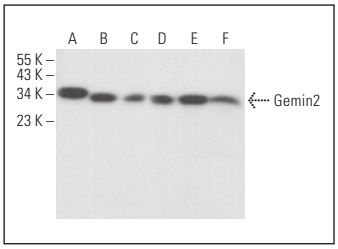
Molecular Weight of Gemin2: 32-34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, PC-3 cell lysate: sc-2220 or Hep G2 cell lysate: sc-2227.

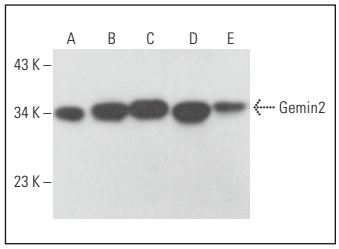
RECOMMENDED SUPPORT REAGENTS

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 (1G9): sc-33703. Western blot analysis of Gemin2 expression in PC-3 (**A**), c4 (**B**), MCF7 (**C**), Hep G2 (**D**), HeLa (**E**) and SK-BR-3 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



Gemin2 (1G9): sc-33703. Western blot analysis of Gemin2 expression in Daudi (**A**), BT-20 (**B**), RAW 264.7 (**C**), 3T3-L1 (**D**) and 3611-RF (**E**) whole cell lysates.

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.