

Gemin2 (2E17): sc-57006

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 spliceosomal 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 TGF β 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. The gene encoding Gemin2 maps to human chromosome 14q13.

REFERENCES

1. Fischer, U., et al. 1997. The SMN-SIP1 complex has an essential role in spliceosomal snRNP biogenesis. *Cell* 90: 1023-1029.
2. Covert, 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.
5. Comijn, J., et al. 2001. The two-handed E box binding zinc finger protein SIP1 downregulates E-cadherin and induces invasion. *Mol. Cell* 7: 1267-1278.
6. LocusLink Report (LocusID: 8487). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: SIP1 (human) mapping to 14q13.

SOURCE

Gemin2 (2E17) is a mouse monoclonal antibody raised against recombinant Gemin2 protein of human origin.

STORAGE

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

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Gemin2 (2E17) is recommended for detection of Gemin2 of human and *Xenopus laevis* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Gemin2 siRNA (h): sc-42129, Gemin2 shRNA Plasmid (h): sc-42129-SH and Gemin2 shRNA (h) Lentiviral Particles: sc-42129-V.

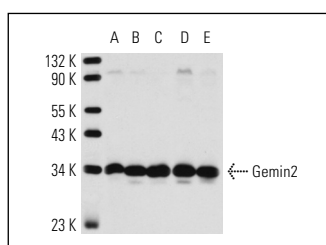
Molecular Weight of Gemin2: 32-34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or Hep G2 cell lysate: sc-2227.

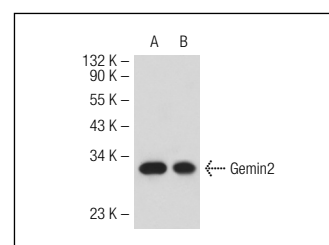
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



Gemin2 (2E17): sc-57006. Western blot analysis of Gemin2 expression in HeLa (A), K-562 (B), Hep G2 (C), SK-BR-3 (D) and IMR-32 (E) whole cell lysates.



Gemin2 (2E17): sc-57006. Western blot analysis of Gemin2 expression in 293T (A) and HeLa (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Mahmoudi, S., et al. 2010. WRAP53 is essential for Cajal body formation and for targeting the survival of motor neuron complex to Cajal bodies. *PLoS Biol.* 8: e1000521.

RESEARCH USE

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