

Gemin5 (C-19): sc-21440

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.
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. Mourelatos, Z., et al. 2001. SMN interacts with a novel family of hnRNP and spliceosomal proteins. *EMBO J.* 20: 5443-5452.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 602595. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Gubitz, A., et al. 2002. Gemin5, a novel WD repeat protein component of the SMN complex that binds Sm Proteins. *J. Biol. Chem.* 277: 5631-5636.

CHROMOSOMAL LOCATION

Genetic locus: GEMIN5 (human) mapping to 5q33.2; Gemin5 (mouse) mapping to 11 B1.3.

SOURCE

Gemin5 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Gemin5 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21440 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Gemin5 (C-19) is recommended for detection of Gemin5 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Gemin5 (C-19) is also recommended for detection of Gemin5 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Gemin5 siRNA (h): sc-42131, Gemin5 siRNA (m): sc-145380, Gemin5 shRNA Plasmid (h): sc-42131-SH, Gemin5 shRNA Plasmid (m): sc-145380-SH, Gemin5 shRNA (h) Lentiviral Particles: sc-42131-V and Gemin5 shRNA (m) Lentiviral Particles: sc-145380-V.

Molecular Weight of Gemin5: 169 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Lee, J.H., et al. 2008. Alterations in Gemin5 expression contribute to alternative mRNA splicing patterns and tumor cell motility. *Cancer Res.* 68: 639-644.
2. Pacheco, A., et al. 2009. A novel role for Gemin5 in mRNA translation. *Nucleic Acids Res.* 37: 582-590.
3. Todd, A.G., et al. 2010. Analysis of SMN-neurite granules: Core Cajal body components are absent from SMN-cytoplasmic complexes. *Biochem. Biophys. Res. Commun.* 397: 479-485.

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.



Try **Gemin5 (10G11): sc-136200**, our highly recommended monoclonal alternative to Gemin5 (C-19).