# Gemin7 (P-19): sc-67496



The Power to Question

## **BACKGROUND**

Gemin7 is a 131 amino acid protein encoded by the human gene GEMIN7. Gemin7, along with Gemin6, is a significant component of the the large multiprotein human SMN complex. The SMN complex functions as an assembly machine for small nuclear ribonucleoproteins (snRNPs)-the major components of the spliceosome. The survival of motor neurons (SMN) protein, a product of the disease gene of the common neurodegenerative disease, spinal muscular atrophy, is also part of the SMN complex. Although Gemin6 and Gemin7 have no significant sequence similarity with Sm proteins, both adopt canonical Sm folds. Moreover, Gemin6 and Gemin7 exist as a heterodimer and interact with each other via an interface similar to that which mediates interactions among the Sm proteins. The Gemin6/Gemin7 complex binds to Sm proteins and might help organize Sm proteins for formation of Sm rings on snRNA targets.

## **REFERENCES**

- Lesage, P., Yang, X. and Carlson, M. 1994. Analysis of the SIP3 protein identified in a two-hybrid screen for interaction with the SNF1 protein kinase. Nucleic Acids Res. 22: 597-603.
- Baccon, J., Pellizzoni, L., Rappsilber, J., Mann, M. and Dreyfuss, G. 2002. Identification and characterization of Gemin7, a novel component of the survival of motor neuron complex. J. Biol. Chem. 277: 31957-31962.
- 3. Ma, Y., Dostie, J., Dreyfuss, G. and Van Duyne, G.D. 2005. The Gemin6-Gemin7 heterodimer from the survival of motor neurons complex has an Sm protein-like structure. Structure 13: 883-892.
- 4. Leung, A.K. and Nagai, K. 2005. Gemin 6 and 7 lend a hand to snRNP assembly. Structure 13: 833-834.
- Shpargel, K.B. and Matera, A.G. 2005. Gemin proteins are required for efficient assembly of Sm-class ribonucleoproteins. Proc. Natl. Acad. Sci. USA 102: 17372-17377.
- Zhang, H., Xing, L., Rossoll, W., Wichterle, H., Singer, R.H. and Bassell, G.J. 2006. Multiprotein complexes of the survival of motor neuron protein SMN with Gemins traffic to neuronal processes and growth cones of motor neurons. J. Neurosci. 26: 8622-8632.
- Gabanella, F., Butchbach, M.E., Saieva, L., Carissimi, C., Burghes, A.H. and Pellizzoni, L. 2007. Ribonucleoprotein assembly defects correlate with spinal muscular atrophy severity and preferentially affect a subset of spliceosomal snRNPs. PLoS ONE 2: e921.
- 8. Donadelli, M., Costanzo, C., Beghelli, S., Scupoli, M.T., Dandrea, M., Bonora, A., Piacentini, P., Budillon, A., Caraglia, M., Scarpa, A. and Palmieri, M. 2007. Synergistic inhibition of pancreatic adenocarcinoma cell growth by Trichostatin A and gemcitabine. Biochim. Biophys. Acta 1773: 1095-1106.

# **CHROMOSOMAL LOCATION**

Genetic locus: GEMIN7 (human) mapping to 19q13.32.

#### **RESEARCH USE**

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

#### **SOURCE**

Gemin7 (P-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Gemin7 of human origin.

## **PRODUCT**

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67496 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

#### **APPLICATIONS**

Gemin7 (P-19) is recommended for detection of Gemin7 of human 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).

Suitable for use as control antibody for Gemin7 siRNA (h): sc-62370.

Molecular Weight of Gemin7: 15 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.

#### **STORAGE**

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

### **PROTOCOLS**

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

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