

Gemin7 siRNA (m): sc-62371

BACKGROUND

Gemin7 is a 131 amino acid protein encoded by the mouse gene Gemin7. Gemin7, along with Gemin6, is a significant component of the large multi-protein 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

1. Lesage, P., et al. 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.
2. Baccon, J., et al. 2002. Identification and characterization of Gemin7, a novel component of the survival of motor neuron complex. *J. Biol. Chem.* 277: 31957-31962.
3. Leung, A.K. and Nagai, K. 2005. Gemin 6 and 7 lend a hand to snRNP assembly. *Structure* 13: 833-834.
4. Ma, Y., et al. 2005. The Gemin6-Gemin7 heterodimer from the survival of motor neurons complex has an Sm protein-like structure. *Structure* 13: 883-892.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: Gemin7 (mouse) mapping to 7 A3.

PRODUCT

Gemin7 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Gemin7 shRNA Plasmid (m): sc-62371-SH and Gemin7 shRNA (m) Lentiviral Particles: sc-62371-V as alternate gene silencing products.

For independent verification of Gemin7 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62371A, sc-62371B and sc-62371C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Gemin7 siRNA (m) is recommended for the inhibition of Gemin7 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Gemin7 (V-17): sc-67498 is recommended as a control antibody for monitoring of Gemin7 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Gemin7 gene expression knockdown using RT-PCR Primer: Gemin7 (m)-PR: sc-62371-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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