SANTA CRUZ BIOTECHNOLOGY, INC.

Gemin7 siRNA (h): sc-62370

BACKGROUND

Gemin7 is a 131 amino acid protein encoded by the mouse gene Gemin7. Gemin7, along with Gemin6, is a significant component of the 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 (human) mapping to 19q13.32.

PRODUCT

Gemin7 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Gemin7 shRNA Plasmid (h): sc-62370-SH and Gemin7 shRNA (h) Lentiviral Particles: sc-62370-V as alternate gene silencing products.

For independent verification of Gemin7 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62370A, sc-62370B and sc-62370C.

PROTOCOLS

See our web site at www.scbt.com 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Gemin7 siRNA (h) is recommended for the inhibition of Gemin7 expression in human 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 µM in 66 µl. 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 (5F1): sc-130668 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 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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Gemin7 gene expression knockdown using RT-PCR Primer: Gemin7 (h)-PR: sc-62370-PR (20 µl). 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.