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# Gemin4 siRNA (m): sc-44827

## BACKGROUND

Gemin4 is a component of the SMN core complex which, while in the cytoplasm, plays an essential role in ribonucleoprotein (snRNP) assembly, including the biogenesis, delivery and recycling of snRNPs to the spliceosome. In the nucleus, where SMN is required for pre-mRNA splicing, Gemin4 concentrates next to coiled bodies in subnuclear structures called gems, that are highly enriched in spliceosomal snRNPs, and in the nucleolus. Deletion or loss-of-function mutations in the SMN lead to the neurodegenerative disease spinal muscular atrophy (SMA). The human Gemin4 maps to chromosome 17p13.

## REFERENCES

1. Charroux, B., et al. 2000. Gemin4. A novel component of the SMN complex that is found in both gems and nucleoli. *J. Cell Biol.* 148: 1177-1186.
2. Park, J.W., et al. 2001. Association of galectin-1 and galectin-3 with Gemin4 in complexes containing the SMN protein. *Nucleic Acids Res.* 29: 3595-3602.
3. Mourelatos, Z., et al. 2001. SMN interacts with a novel family of hnRNP and spliceosomal proteins. *EMBO J.* 20: 5443-5452.
4. Di, L., et al. 2003. HCC-associated protein HCAP1, a variant of Gemin4, interacts with zinc-finger proteins. *J. Biochem.* 133: 713-718.
5. Patterson, R.J., et al. 2004. Understanding the biochemical activities of galectin-1 and galectin-3 in the nucleus. *Glycoconj. J.* 19: 499-506.
6. Wang, J.L., et al. 2004. Nucleocytoplasmic lectins. *Biochim. Biophys. Acta* 1673: 75-93.

## CHROMOSOMAL LOCATION

Genetic locus: Gemin4 (mouse) mapping to 11 B5.

## PRODUCT

Gemin4 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Gemin4 shRNA Plasmid (m): sc-44827-SH and Gemin4 shRNA (m) Lentiviral Particles: sc-44827-V as alternate gene silencing products.

For independent verification of Gemin4 (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-44827A, sc-44827B and sc-44827C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}$  C, avoid contact with RNAses and repeated freeze thaw cycles.

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

## APPLICATIONS

Gemin4 siRNA (m) is recommended for the inhibition of Gemin4 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  $\mu$ M in 66  $\mu$ 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

Gemin4 (17D10): sc-136199 is recommended as a control antibody for monitoring of Gemin4 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 Gemin4 gene expression knockdown using RT-PCR Primer: Gemin4 (m)-PR: sc-44827-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.