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# Myotrophin siRNA (m): sc-45701

## BACKGROUND

Myotrophin (V-1 protein) is a ubiquitously expressed cytoplasmic protein that can translocate to the nucleus during sustained NF $\kappa$ B activation. The gene encoding for this protein localizes to chromosome 7q33. Myotrophin may be involved in cerebellar morphogenesis and contains an acetylated N-terminus and 2.5 internal 33 amino acid ankyrin repeats. It is important in the differentiation of cerebellar neurons, particularly of granule cells. The 117 amino acid protein has been associated with, and able to induce, cardiac hypertrophy. Myotrophin increases proto-oncogene, ANF and  $\beta$ -Myosin heavy chain transcript levels. Myotrophin is upregulated when myocytes undergo cyclic stretch or are treated with tumor necrosis factor  $\alpha$  (TNF  $\alpha$ ) or interleukin-1 $\beta$ . Highest levels of Myotrophin are detected in brain and lowest levels in skeletal muscle.

## REFERENCES

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- Sen, S., et al. 1990. Myotrophin: purification of a novel peptide from spontaneously hypertensive rat heart that influences myocardial growth. *J. Biol. Chem.* 265: 16635-16643.
- Sil, P., et al. 1993. Myotrophin in human cardiomyopathic heart. *Circ. Res.* 73: 98-108.
- Mukherjee, D.P., et al. 1993. Myotrophin induces early response genes and enhances cardiac gene expression. *Hypertension* 21: 142-148.
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- Anderson, K.M., et al. 1999. cDNA sequence and characterization of the gene that encodes human myotrophin/V-1 protein, a mediator of cardiac hypertrophy. *J. Mol. Cell. Cardiol.* 31: 705-719.
- Gupta S, Sen S. 2002. Myotrophin- $\kappa$ B DNA interaction in the initiation process of cardiac hypertrophy. *Biochim. Biophys. Acta* 1589: 247-260.

## CHROMOSOMAL LOCATION

Genetic locus: Mtpn (mouse) mapping to 6 B1.

## PRODUCT

Myotrophin 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 Myotrophin shRNA Plasmid (m): sc-45701-SH and Myotrophin shRNA (m) Lentiviral Particles: sc-45701-V as alternate gene silencing products.

For independent verification of Myotrophin (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-45701A, sc-45701B and sc-45701C.

## RESEARCH USE

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

## 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

Myotrophin shRNA (m) Lentiviral Particles is recommended for the inhibition of Myotrophin 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

Myotrophin (A-10): sc-166071 is recommended as a control antibody for monitoring of Myotrophin 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 goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker<sup>™</sup> compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Myotrophin gene expression knockdown using RT-PCR Primer: Myotrophin (m)-PR: sc-45701-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.

## PROTOCOLS

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