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# Tropomyosin 4 siRNA (m): sc-155974

## BACKGROUND

Tropomyosins are a group of structural proteins that are present in virtually all eukaryotic cells, both muscle and non-muscle, where they bind Actin filaments and function to modulate Actin-Myosin interaction and stabilize Actin filament structure. Tropomyosin 4 (TPM4), also known as TM30p1 or Tropomyosin  $\alpha$ 4 chain, is a 248 amino acid cytoskeletal protein that plays an essential role in regulation of striated muscle contraction. Existing as a heterodimer of  $\alpha$  and  $\beta$  chains, Tropomyosin 4 undergoes alternative splicing to produce two alternatively spliced isoforms that are found in cardiac tissue and platelets. Tropomyosin expression is elevated in hypertensive patients with cardiac hypertrophy. A member of the Tropomyosin family, Tropomyosin 4 forms a coiled coil structure of two polypeptide chains and is encoded by a gene that maps to human chromosome 19.

## REFERENCES

1. MacLeod, A.R., et al. 1985. A muscle-type tropomyosin in human fibroblasts: evidence for expression by an alternative RNA splicing mechanism. *Proc. Natl. Acad. Sci. USA* 82: 7835-7839.
2. MacLeod, A.R., et al. 1987. Characterization of a cDNA defining a gene family encoding TM30p1, a human fibroblast tropomyosin. *J. Mol. Biol.* 194: 1-10.
3. Crabos, M., et al. 1991. The calcium binding protein Tropomyosin in human platelets and cardiac tissue: elevation in hypertensive cardiac hypertrophy. *Eur. J. Clin. Invest.* 21: 472-478.
4. Laing, N.G., et al. 1995. A mutation in the  $\alpha$  Tropomyosin gene TPM3 associated with autosomal dominant nemaline myopathy. *Nat. Genet.* 9: 75-79.
5. Wilton, S.D., et al. 1996. Assignment of the human  $\alpha$ -Tropomyosin gene TPM4 to band 19p13.1 by fluorescence *in situ* hybridization. *Cytogenet. Cell Genet.* 72: 294-296.
6. Meech, S.J., et al. 2001. Unusual childhood extramedullary hematologic malignancy with natural killer cell properties that contains Tropomyosin 4— anaplastic lymphoma kinase gene fusion. *Blood* 98: 1209-1216.

## CHROMOSOMAL LOCATION

Genetic locus: Tpm4 (mouse) mapping to 8 B3.3.

## PRODUCT

Tropomyosin 4 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 Tropomyosin 4 shRNA Plasmid (m): sc-155974-SH and Tropomyosin 4 shRNA (m) Lentiviral Particles: sc-155974-V as alternate gene silencing products.

For independent verification of Tropomyosin 4 (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-155974A, sc-155974B and sc-155974C.

## 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  $\mu$ 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

Tropomyosin 4 siRNA (m) is recommended for the inhibition of Tropomyosin 4 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Tropomyosin 4 gene expression knockdown using RT-PCR Primer: Tropomyosin 4 (m)-PR: sc-155974-PR (20  $\mu$ 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.

## PROTOCOLS

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