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# LTBP-4 siRNA (m): sc-45862

## BACKGROUND

LTBP-4 (latent TGF $\beta$ -binding protein 4) is a structural component of connective tissue microfibrils and a local regulator of TGF $\beta$  tissue deposition and signaling. LTBP-4 exists in at least four different forms, due to alternative splicing at the amino terminus and at the central epidermal growth factor repeat domain. LTBP-4 mRNA is present in heart, aorta, uterus and small intestine. Human LTBP-4 localizes to chromosomal position 19q13.1-19q13.2.

## REFERENCES

- Giltay, R., et al. 1997. Sequence and expression of a novel member (LTBP-4) of the family of latent transforming growth factor- $\beta$  binding proteins. *FEBS Lett.* 411: 164-168.
- Saharinen, J., et al. 1998. Identification and characterization of a new latent transforming growth factor  $\beta$ -binding protein, LTBP-4. *J. Biol. Chem.* 273: 18459-18469.
- Koli, K., et al. 2001. Novel non-TGF $\beta$ -binding splice variant of LTBP-4 in human cells and tissues provides means to decrease TGF $\beta$  deposition. *J. Cell. Sci.* 114: 2869-2878.
- Mangasser-Stephan, K., et al. 2001. Expression of isoforms and splice variants of the latent transforming growth factor  $\beta$ -binding protein (LTBP) in cultured human liver myofibroblasts. *Liver* 21: 105-113.
- Penttinen, C., et al. 2002. Secretion of human latent TGF $\beta$ -binding protein-3 (LTBP-3) is dependent on co-expression of TGF $\beta$ . *J. Cell. Sci.* 115: 3457-3468.
- Sterner-Kock, A., et al. 2002. Disruption of the gene encoding the latent transforming growth factor  $\beta$  binding protein 4 (LTBP-4) causes abnormal lung development, cardiomyopathy, and colorectal cancer. *Genes Dev.* 17: 2264-2273.
- Isogai, Z., et al. 2003. Latent transforming growth factor  $\beta$ -binding protein 1 interacts with fibrillin and is a microfibril-associated protein. *J. Biol. Chem.* 278: 2750-2757.
- Koli, K., et al. 2004. Disruption of LTBP-4 function reduces TGF $\beta$  activation and enhances BMP-4 signaling in the lung. *J. Cell. Biol.* 167: 123-133.

## CHROMOSOMAL LOCATION

Genetic locus: *Ltbp4* (mouse) mapping to 7 A3.

## PRODUCT

LTBP-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 LTBP-4 shRNA Plasmid (m): sc-45862-SH and LTBP-4 shRNA (m) Lentiviral Particles: sc-45862-V as alternate gene silencing products.

For independent verification of LTBP-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-45862A, sc-45862B and sc-45862C.

## 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

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

## GENE EXPRESSION MONITORING

LTBP-4 (A-2): sc-393666 is recommended as a control antibody for monitoring of LTBP-4 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 IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (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 LTBP-4 gene expression knockdown using RT-PCR Primer: LTBP-4 (m)-PR: sc-45862-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) or our catalog for detailed protocols and support products.