

# LTBP-1 siRNA (h): sc-45454

## BACKGROUND

Latent transforming growth factor- $\beta$  1 binding protein 1 (LTBP-1), a heavy glycoprotein, is part of the platelet-derived TGF- $\beta$ 1 complex. LTBP-1 serves as an anchor for latent TGF- $\beta$  in the extracellular matrix and is a component of microfibrillar structures. Cleavage of LTBP results in LTBP-1, which may sequester latent TGF- $\beta$  in the extracellular matrix and regulate its activation. LTBP-1 mRNA is enriched in ovarian carcinoma tissues and highly expressed in serous and mucinous adenocarcinomas.

## REFERENCES

1. Kanzaki, T., et al. 1990. TGF- $\beta$ 1 binding protein: a component of the large latent complex of TGF- $\beta$ 1 with multiple repeat sequences. *Cell* 61: 1051-1061.
2. Olofsson, A., et al. 1995. Efficient association of an amino-terminally extended form of human latent transforming growth factor- $\beta$  binding protein with the extracellular matrix. *J. Biol. Chem.* 270: 31294-31297.
3. Saharinen, J., et al. 1999. Latent transforming growth factor- $\beta$ -binding proteins (LTBPs)—structural extracellular matrix proteins for targeting TGF- $\beta$  action. *Cytokine Growth Factor Rev.* 10: 99-117.
4. Gualandris, A., et al. 2000. The latent transforming growth factor- $\beta$  binding protein-1 promotes *in vitro* differentiation of embryonic stem cells into endothelium. *Mol. Cell. Biol.* 11: 4295-4308.
5. Breitkopf, K., et al. 2001. Expression and matrix deposition of latent transforming growth factor  $\beta$  binding proteins in normal and fibrotic rat liver and transdifferentiating hepatic stellate cells in culture. *Hepatology* 33: 387-396.
6. Higashi, T., et al. 2001. Overexpression of latent transforming growth factor- $\beta$  1 (TGF- $\beta$ 1) binding protein 1 (LTBP-1) in association with TGF- $\beta$ 1 in ovarian carcinomas. *Jpn. J. Cancer Res.* 92: 506-515.
7. 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.
8. SWISS-PROT/TrEMBL (Q14766). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

## CHROMOSOMAL LOCATION

Genetic locus: LTBP1 (human) mapping to 2p22.3.

## PRODUCT

LTBP-1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LTBP-1 shRNA Plasmid (h): sc-45454-SH and LTBP-1 shRNA (h) Lentiviral Particles: sc-45454-V as alternate gene silencing products.

For independent verification of LTBP-1 (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-45454A, sc-45454B and sc-45454C.

## 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

LTBP-1 siRNA (h) is recommended for the inhibition of LTBP-1 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  $\mu$ 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-1 (H-1): sc-271140 is recommended as a control antibody for monitoring of LTBP-1 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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LTBP-1 gene expression knockdown using RT-PCR Primer: LTBP-1 (h)-PR: sc-45454-PR (20  $\mu$ l, 533 bp). 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.