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# LTBP-1 shRNA (h) Lentiviral Particles: sc-45454-V

## 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.

## CHROMOSOMAL LOCATION

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

## PRODUCT

LTBP-1 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see LTBP-1 siRNA (h): sc-45454 and LTBP-1 shRNA Plasmid (h): sc-45454-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ\text{C}$ . Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ\text{C}$  for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

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

## APPLICATIONS

LTBP-1 shRNA (h) Lentiviral Particles is recommended for the inhibition of LTBP-1 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## 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 (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™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ 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™ Mounting Medium: sc-24941.

## 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  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.